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Omnibus Energy Legislation: H.R. 4 Side-by-side Comparison

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Summary

The House and Senate have passed two distinct versions of an omnibus energy bill (H.R. 4), the first comprehensive energy legislation in ten years. The substantial differences between the two chambers' approaches to energy policy remain to be resolved in conference, which is expected to take place over the summer.

The House version of H.R. 4, the Securing America's Future Energy Act of 2001, which passed August 2, 2001, includes a key component of the Bush Administration's energy strategy: opening the Arctic National Wildlife Refuge (ANWR) to oil and gas exploration and development. The Senate version, the Energy Policy Act of 2002, approved on April 25, 2002, leaves ANWR off-limits to drilling.

The electricity provisions of the Senate-passed H.R. 4 would continue to change the regulatory requirements for the wholesale electric market. The House-passed H.R. 4 does not contain electricity provisions. In general, the Senate version would repeal the Public Utility Holding Company Act (PUHCA) and give the Federal Energy Regulatory Commission (FERC) and the state utility commissions access to utility books and records. It would also repeal the mandatory purchase requirement of the Public Utility Regulatory Policies Act (PURPA) when FERC finds that a competitive electric market exists.

Automobile and light truck fuel efficiency was the subject of considerable debate in both houses. In its version of H.R. 4, the House included language that calls for a reduction of 5 billion gallons in light-duty truck fuel consumption over the period of model years 2004-2010. The Senate version would charge the National Highway Traffic Safety Administration (NHTSA) with development of new Corporate Average Fuel Economy (CAFE) standards using the administrative procedure that, since FY1996, the agency had been enjoined by Congress from initiating. However, the Senate bill also would freeze "pickup trucks" at the current light truck standard of 20.7 mpg, likely shifting the burden for achieving savings to the passenger automobile portion of the fleet.

Both versions of H.R. 4 include a package of energy tax cuts, primarily tax incentives (or subsidies) for qualifying energy producers and consumers. In terms of revenue loss, the House bill cuts energy taxes by $35.4 billion over the ten-year period from FY2002 through FY2011. In contrast, the Senate bill's ten-year projected revenue loss is about $15.2 billion. The House bill provides a greater tax cut for fossil fuel supply – about $17 billion more over ten years – than the Senate bill.

Several significant provisions are contained only in the Senate-passed bill, including programs to address global climate change, loan and price guarantees for a proposed Alaska natural gas pipeline, a cutoff of oil imports from Iraq, minimum renewable energy content in motor vehicle fuel, and renewable energy requirements for electricity providers.

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The House version of H.R. 4, the Securing America's Future Energy Act of 2001, which passed August 2, 2001, includes a key component of the Bush Administration's energy strategy: opening the Arctic National Wildlife Refuge (ANWR) to oil and gas exploration and development. The Senate version, the Energy Policy Act of 2002, approved on April 25, 2002, leaves ANWR off-limits to drilling.

The Senate-passed bill would make substantial changes in wholesale electricity regulation, while the House bill has no electricity provisions. Other provisions contained only in the Senate-passed bill include programs to address global climate change, loan and price guarantees for a proposed Alaska natural gas pipeline, a cutoff of oil imports from Iraq, and renewable energy requirements for electricity providers. Both bills include provisions to address motor vehicle fuel economy, nuclear accident liability, energy taxes, and authorizations of energy research and development programs (see Table 1).

This report summarizes the major provisions of the House- and Senate-passed bills, provides a detailed side-by-side comparison, and lists annual funding authorizations.

Major Provisions

Arctic National Wildlife Refuge

H.R. 4 as passed by the House would allow for oil and gas leasing in ANWR. It contains provisions that would limit the footprint of development to 2,000 acres of the Coastal Plain. The Senate bill contains no ANWR provision. Essentially, the Senate defeated ANWR development by refusing, 46-54, to invoke cloture on a filibuster of a pro-development amendment, which was subsequently withdrawn.

The U.S. Geological Survey and the Energy Information Administration have made estimates of ANWR's hydrocarbon potential and the range of expectations for oil production. In short, recent estimates are that at $24 per barrel (in 1996 dollars, or about $26.50 in 2002 dollars), ANWR has a 95% probability of holding 2.0 billion recoverable barrels or more and a 5% chance of holding 9.4 billion barrels or more. The mean value in this range is 5.24 billion recoverable barrels. Under the mean value, peak production rates would range between 0.55 and 0.775 million barrels per day (mbd). Were leasing to begin within the next few years, initial ANWR production might occur around 2010.

Critics of this provision contend that, even if the mean level of production were achieved, it would be only about 2.75% to 3.8% of current levels of U.S. petroleum consumption, now in the 20 mbd area. With oil imports approaching 12 mbd, ANWR would reduce imports by not much more than 6% at its highest likely output under the mean recovery estimate. Opponents contend that such levels of production would be inconsequential compared to the impact on an important environmental asset.

Those favoring development note that while the amounts of oil supply are small relative to these national aggregates, 550,000 to 755,000 barrels per day is a significant amount of oil. As an

energy policy factor, it could have an impact on the world supply-demand balance. An example often cited is that it is in the range of U.S. oil imports from Iraq, which the Senate-passed bill would halt for policy reasons. In 2001, the United States imported 780,000 barrels per day from Iraq. Development supporters also contend that current technology would allow ANWR exploration and production with minimal environmental impact.

Electricity Regulation

The electric utility industry has been in the process of transformation. During the past two decades, technology improvements, changes in the economics for generating electricity, and new federal laws and regulations have changed the nature of electric generation and promoted markets for electricity. As a result, widespread competition is occurring on the wholesale level, and more than half of the states are moving toward retail competition. The electricity provisions of the Senate-passed H.R. 4 would continue to change the regulatory requirements for the wholesale electric market. The House-passed H.R. 4 does not contain electricity provisions.

In general, the Senate version would repeal the Public Utility Holding Company Act (PUHCA) and give the Federal Energy Regulatory Commission (FERC) and the state utility commissions access to utility books and records. It would also repeal the mandatory purchase requirement of the Public Utility Regulatory Policies Act (PURPA) when FERC finds that a competitive electric market exists. In addition, the Senate-passed H.R. 4 would give FERC more review authority over certain electric utility mergers and increase the value of asset transfers that would trigger FERC review. It would require FERC to apply cost-of-service rates when market-based rates are unjust, unreasonable, unduly discriminatory or preferential; require an electric reliability organization to develop and enforce mandatory reliability standards; provide access to the transmission system for certain intermittent generators; create an Office of Consumer Advocacy within the Department of Justice; and give states the authority to prescribe and enforce laws regarding the application of the Consumer Protection Subtitle.

Motor Vehicle Fuel Economy

Automobile and light truck fuel efficiency was the subject of considerable debate in both houses. The 106th Congress had asked the National Academy of Sciences (NAS) to conduct a study on whether corporate average fuel economy (CAFE) levels could be adjusted without unacceptable consequences to vehicle safety, the industry, and consumer choice. This was a significant departure from previous congressional action, which since FY1996 had prohibited the spending of appropriated funds for any sort of rulemaking that would alter CAFE, effectively freezing the standards at 27.5 miles per gallon (mpg) for passenger automobiles and 20.7 mpg for light trucks. The NAS study, released in July 2001, did not recommend specific CAFE increases, but did conclude that it was possible to achieve a more than 40% improvement in light truck and sport utility vehicle (SUV) fuel economy over a 10-15 year period at costs that would be recoverable over the lifetime of vehicle ownership.

In its version of H.R. 4, the House included language that calls for a reduction of 5 billion gallons in light-duty truck fuel consumption over the period of model years 2004-2010. The Department of Transportation would establish fuel economy standards sufficient to achieve the required reduction. An amendment to establish a combined passenger car and truck CAFE standard of 27.5 mpg by MY2007 was defeated by 160-269.

A more ambitious proposal in the Senate to establish a combined fleetwide average of 36 mpg by MY2015 never reached a vote. On March 13, 2002, the Senate voted, 62-38, for an amendment to charge the National Highway Traffic Safety Administration (NHTSA) with development of new

CAFE standards using the administrative procedure that, since FY1996, the agency had been forbidden by law from initiating. However, the Senate then approved an amendment, 56-44, to freeze "pickup trucks" at the current light truck standard of 20.7 mpg, likely shifting at least some of the burden for achieving savings to the passenger automobile portion of the fleet.

Tax Incentives

Both versions of H.R. 4 include a package of energy tax cuts, primarily tax incentives (or subsidies) for qualifying energy producers and consumers.

For purposes of this report, a tax provision is classified according to whether it is an incentive for 1) fossil fuel supply (including coal output incentives), 2) electricity restructuring (which is also an energy supply incentive), 3) reduced fossil fuel demand through enhanced energy efficiency, and 4) reduced fossil fuel demand through alternative and renewable fuels output. A miscellaneous or "catch-all" category at the end of the tax section of this report describes provisions that are not easily categorized according to this schema. Note that the fossil fuels supply category is further subdivided according to whether a particular provision affects oil/gas exploration and production, refining and distribution, or coal output. Similarly, the energy efficiency and renewable fuels tax incentives are further categorized, as closely as possible, according to the energy consuming sector that would be primarily affected, i.e., the business (including commercial and industry), residential, or transportation sectors.

In terms of revenue loss, the latest estimates show that the House bill cuts energy taxes by about $23.2 billion over the five-year period from FY2003 through FY2007, and $35.4 billion over the ten-year period from FY2003 through FY2012. In contrast, the Senate bill's five and ten-year revenue losses are estimated at about $13.3 billion and $15.2 billion, respectively.[1] The incentives targeted toward reducing the demand for fossil energy are, in absolute dollar terms, about the same in each bill – each bill provides about $8 billion of tax incentives. The House bill is, however, somewhat more weighted toward energy efficiency than the Senate bill.

The major difference in the two bills is in the incentives for fossil fuel supply, including electricity restructuring provisions. The House bill provides a greater tax cut for fossil fuel supply – about $17 billion more over ten years – and has a broader mix of provisions, including those aimed at drilling, production, refining, and transportation of fossil fuels, than the Senate bill. Many of the fossil fuel incentives in the House version of H.R. 4 include capital investment incentives to stimulate production and distribution of oil and gas, and the production and transmission of electricity, provisions that are either not present in the Senate version or included at a much lower level.

An underlying theme of the House-passed bill is that many of the nation's recent energy problems have been caused by supply and capacity shortages resulting from demand stimulated by rapid economic growth and relatively low energy prices. Thus, while the House bill also includes incentives for reduced demand – conservation and efficiency – a primary purpose of that legislation appears to be to stimulate energy supplies. This is particularly true of the outlying years – the period 2007-2012, when many of the demand disincentives expire. In relative terms, however – i.e., in relation to the size of the energy industry – the supply incentives are modest

[1] The most recent estimates of revenue losses are in: U.S. Congress. Joint Committee on Taxation. *Comparison of Division C of H.R. 4, The "Energy Tax Policy Act of 2001," as Passed by the House of Representatives and Division H of H.R. 4, The "Energy Tax Incentives Act of 2002," as Amended by the Senate.* Prepared by the staff of the Joint Committee on Taxation. May 23, 2002. JCX-43-02.

(and even more modest in the Senate bill), although they would constitute a significant expansion over existing energy tax law (more so for the House bill).

Alaska Natural Gas Pipeline

Alaska's Prudhoe Bay field, currently a major source of U.S. crude oil, holds 26 trillion cubic feet (tcf) of natural gas that cannot be produced for lack of a transport system. Those supplies represent the equivalent of 1.25 years of current domestic consumption, which amounts to about 22 tcf per year and is expected to grow to 29 tcf in 2010. Other nearby fields hold more proven gas reserves, and it is likely that, were further exploration to be undertaken, additional gas would be found on the Alaska North Slope.

Several proposals have been made to bring North Slope gas to market in the years since the Trans Alaska Pipeline System (TAPS) was authorized for crude oil transportation. Pursuant to the Alaska Natural Gas Transportation Act, the Alaska Natural Gas Transportation System (ANGTS) was authorized in 1977. This pipeline would follow the TAPS route, the Dalton Highway to Fairbanks, AK, and then the Alaska Highway, crossing the Yukon Territory and British Columbia into Alberta. This route is a focal point of the Senate bill.

The other pipeline proposal under current consideration by corporate sponsors is the Mackenzie Delta route, which would begin at Prudhoe Bay, head east, transiting offshore under the Beaufort Sea (off ANWR), and come ashore in the Mackenzie Bay. It would then connect with existing infrastructure, which now ends at Norman Wells, Northwest Territories. This pipeline would transit a part of Canada where large gas deposits are thought to exist. It could be a catalyst for their development. From one perspective, this might be seen as beneficial to North American gas supply. On the other hand, it could be viewed by producers of potentially more expensive North Slope gas as unwelcome competition.

Both the Senate and House versions of H.R. 4 address the route issue, precluding the off-shore proposal and directing U.S. project development toward a route that initially follows TAPS. The Senate bill provides two financial incentives. The first offers up to $10 billion in DOE loan guarantees for project financing, of which the sponsors must put down 20%. Secondly, a tax credit would support Alaska North Slope gas at an inflation-adjusted price of $3.25 per thousand cubic feet (mcf), at the point where the gas would enter the currently existing pipeline system in Alberta.

Nuclear Accident Liability

An extension of the Price-Anderson Act, which addresses liability for damages to the general public from nuclear incidents, is included in the Senate-passed H.R. 4 but not in the House-passed bill. However, after leaving Price-Anderson out of its version of the omnibus energy bill, the House passed a separate Price-Anderson extension bill (H.R. 2983) that contains provisions similar to those later adopted in the Senate.

Under the Price-Anderson Act (primarily Section 170 of the Atomic Energy Act of 1954, 42 U.S.C. 2210), the owners of commercial reactors must assume all liability for radiological damages awarded to the public by the court system, but their total liability is limited to the amount provided by private insurance and an industry self-insurance system. The Price-Anderson Act also authorizes the Department of Energy (DOE) to indemnify contractors who operate hazardous DOE nuclear facilities. The limit on DOE contractor liability is the same as for commercial reactors, except when the limit for commercial reactors drops because of a decline in the number of covered reactors.

Significant differences between the Price-Anderson provisions in the Senate-passed H.R. 4 and House-passed H.R. 2983 involve how long indemnification authority should be extended and the formula for determining the commercial reactor liability limit. In addition, the House bill would raise each reactor's maximum annual payment for accident damages from $10 million to $15 million and impose an inflation adjustment, while the Senate bill would leave the annual payment level unchanged.

There are also several House provisions not contained in the Senate bill, including a provision that would authorize the federal government to sue DOE contractors to recover at least some of the compensation that the government had paid for any accident caused by intentional DOE contractor management misconduct. Such cost recovery would be limited to the amount of the contractor's profit under the contract involved, and no recovery would be allowed from nonprofit contractors.

Global Climate Change

The House-passed version of H.R. 4 contains only one directly related climate change provision: authorizing funding for climate change protection programs within the Environmental Protection Agency (EPA).

In contrast, several titles of H.R. 4 as passed by the Senate contain provisions to address the global climate change issue. Finding growing evidence that greater greenhouse gas concentrations are contributing to global climate changes, the Senate-passed bill calls for the United States to demonstrate international leadership in addressing the issue.

Title X of the Senate version provides for organizational changes within the federal government to focus on climate change issues. Specifically, a new Office of National Climate Change Policy (ONCCP) would develop a national response strategy; a new Interagency Task Force would serve as the primary forum through which federal agencies assist the new ONCCP in developing and updating the national strategy; and a new Department of Energy (DOE) Office of Climate Change Technology would oversee research and development of new technology and provide analytical support and data.

Further climate change activities are detailed in Titles XI and XIII. Specifically, Title XI would establish a new national greenhouse database while Title XIII would focus the research, development, demonstration, and technology deployment programs within several federal agencies on global climate change science and mitigation of climate change.

Iraq Oil Import Cutoff

The Senate bill would ban oil imports from Iraq. Imports could be resumed upon presidential certification that Iraq was in compliance with U.N. resolutions regarding weapons of mass destruction and the oil-for-food program, and ceased the practice of supporting the families of suicide bombers. Additionally, the imports could resume if the President were to find that they were in the interest of national security.

In 2001, the United States imported 778,000 barrels per day of Iraqi oil, an amount equal to 6.7% of the nation's total imports. It is likely that the resulting import deficit here would be made up by supplies from other exporting nations. To what extent Iraq would be unable to find customers for this oil, and actually export less as a result, is hard to determine. But, under this bill, it would lose its largest single customer. A possible outcome is that Iraq would sell fewer barrels than it might otherwise export, and because of the difficulty in replacing the United States as a customer, those barrels might be sold at a discount relative to similar oil from other exporters.

Renewable Portfolio Standard (RPS)

Section 264 of the Senate version of H.R. 4 proposes that retail electricity suppliers (utilities, except for municipal and cooperative utilities) be required to obtain a minimum percentage of their power production from a portfolio of new renewable energy resources. The minimum energy target or "standard" would start at 1% in 2005, rise at a rate of about 1.2% every two years, and peak at 10% in 2019.

Eligible resources include solar, wind, ocean, and geothermal energy, most forms of biomass, landfill gas, and incremental hydropower. A generation offset from renewables used on site to reduce the measured demand from the grid is also eligible. The base for calculating the target production level excludes power from eligible renewables, hydropower, and municipal solid waste. Thus, states with a large amount of existing biomass, hydro, or other renewable power generation would have a proportionately lower target for new generation.

Tradable credits are created, which can be purchased in place of power from other suppliers, to help retailers meet the target at the lowest cost. The credits would function like the Clean Air Act emission allowance trading system, which has lowered compliance costs for air pollution regulations. The bill's credit trading provision is made flexible by allowing a supplier to "borrow" from expected future credits to fill a present shortfall or to "carry forward" surplus credits to future years.

A cost cap for the credits is set as the lesser of 1.5 cents/kwh (Section 271) or 200% of the average market value of the credits. The lower the cost cap, the more it may restrict portfolio diversity and deter generation from solar and other higher-cost renewable resources. Utilities sought a cost cap near 1 cent/kwh, while environmental groups sought a cap near 4 to 5 cents/kwh. State experience suggests that a cost cap is key to compliance cost control and may also allow compliance cost to flow through as a business cost.

Some see a federal RPS as a way to substitute a more market-oriented mechanism for the PURPA Section 210 requirement that utilities purchase power from renewables at an administratively determined "avoided cost." Ten states, including Texas, and a few foreign governments, have an RPS that provides a base of experience for the federal proposal.

Ethanol and Reformulated Gasoline

There are several key fuels provisions in Title VII of the Senate version. The bill would ban the use of MTBE (methyl tertiary butyl ether) in gasoline. MTBE is commonly used to meet the oxygen content standard in federal reformulated gasoline (RFG). However, the additive has been detected in groundwater in several states.

In addition to a ban on MTBE use, the oxygen requirement would also be eliminated. However, the current RFG oxygen requirement benefits ethanol, MTBE's chief competitor. To protect the existing market for ethanol and promote its expansion, the bill would require the use of renewable fuels in gasoline. Ethanol is the most widely used renewable fuel, and would be used to meet the majority of the requirement. Effectively, the bill would nearly triple U.S. ethanol consumption by 2012. In addition, renewable fuel blenders would be shielded from defective product liability.

Overview of House and Senate Versions

Although both versions of H.R. 4 are omnibus energy bills, a number of the most significant provisions are included only in one or the other. In many cases, this reflects fundamentally

different views on energy policy between the two chambers. Table 1 briefly summarizes the major aspects of the two bills.

Table 1. Major Provisions of House and Senate Energy Bills

Provision	Senate	House
Electricity restructuring	Changes regulatory requirements to emphasize market rates.	No provision.
Arctic National Wildlife Refuge (ANWR)	No provision.	Opens ANWR to oil and gas leasing.
Corporate Average Fuel Economy (CAFE)	Requires new CAFE standards, except for pickup trucks.	Requires a reduction in fuel consumption by new light trucks.
Energy taxes	Provides $15.2 billion in energy tax incentives over a ten-year period.	Provides $35.4 billion in energy tax incentives over a ten-year period, more than half for fossil fuel supply.
Global climate change	Establishes federal offices to focus on global climate change, authorizes R&D.	No specific provisions.
Appliance efficiency standards	Requires new standards for central air conditioners, heat pumps, and appliance standby power.	Sets standard for appliance standby power.
Nuclear accident liability (Price-Anderson Act)	Extends Price-Anderson coverage for DOE facilities.	No provisions. (Separate Price-Anderson extension, H.R. 2983, passed by House.)
Alaska natural gas pipeline	Provides loan and price guarantees for Alaska natural gas pipeline and forbids proposed Beaufort Sea route.	No loan or price guarantees, but forbids Beaufort Sea route.
Iraqi oil cutoff	Forbids direct or indirect importation of Iraqi oil until certain conditions are met.	No provisions.
Renewable energy content in motor vehicle fuel	Requires motor vehicle fuel sold in the United States to contain a minimum volume of ethanol or other renewable fuel.	No provisions.
Renewable Portfolio Standard	Requires electric utilities to provide minimum percentages of power from renewable sources.	No provisions.
Energy Program Authorizations, FY2002-FY2006	Authorizes $53.8 billion (see table 2).	Authorizes $34.9 billion (see table 3).

Organization of Report

The remainder of this report provides a side-by-side comparison of the provisions of H.R. 4 as passed by the House and Senate. The non-tax sections are organized in the numerical order of the Senate-passed version, followed by a numerical index of the non-tax sections in the House-passed version. Tax provisions are organized by topic, followed by a numerical index of the tax sections in both versions of H.R. 4.

Funding authorizations for the two bills are shown in separate tables for the House and Senate versions, which are cross referenced to each other. Further analysis and background are available in the CRS products cited at the end of the report.

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Short Title[2]

Provision	Current Law	Senate	House	Comments
Short titles and table of contents	No provision.	*Sec. 1.* This Act may be cited as the "Energy Policy Act of 2002." *Sec. 2.* Table of Contents.	*Sec. 100.* This Act may be cited as the "Securing America's Future Energy Act of 2001," or the "SAFE Act of 2001" (section includes Table of Contents). *Sec. 100.* Division A may be cited as the "Energy Advancement and Conservation Act of 2001." *Sec. 6001.* Division F may be cited as the "Energy Security Act."	

Regional Coordination

Provision	Current Law	Senate	House	Comments
Policy on regional coordination	No current law.	*Sec.101.* The policy of the federal government is to encourage states to coordinate, on a regional basis, policies to maximize the reliability of energy services, including electric transmission and generation, gas transportation, storage, and distribution, and fuel conservation.	No similar provision.	
Federal support for regional coordination	*No current law.*	*Sec. 102.* The Department of Energy is directed to provide technical assistance to states and regional organizations to assist with activities defined in Sec. 101.	No provision.	

Electricity

Amendments to the Federal Power Act

Provision	Current Law	Senate	House	Comments
Definitions	The Federal Power Act defines an electric utility as "any person or State agency (including any municipality) which sells electric energy; such term includes the Tennessee Valley Authority, but does	*Sec. 201.* The Federal Power Act is amended to add federal power marketing agencies to the definition of an electric utility. A definition of a transmitting utility is added to the Federal Power Act. A transmitting utility includes state and municipally owned or operated transmission	No provision.	

[2] Provisions are organized by Senate section numbers. To find a specific House section by its number, see the index at the end of these tables.

Provision	Current Law	Senate	House	Comments
	not include any Federal power marketing agency" (16 U.S.C. 796).	facilities involved in interstate commerce or transmission of electricity at wholesale.		
Electric utility mergers	Under Section 203(a) of the Federal Power Act, FERC review for transfer of assets applies for transactions valued at $50,000 or more (16 U.S.C. 824b).	*Sec. 202*. The Federal Power Act is amended to give FERC review authority for transfer of assets valued in excess of $10 million. FERC must give state public utility commissions and governors reasonable notice in writing. FERC must establish rules to comply with this section.	No provision.	This provision significantly increases the value of the asset transfer that would trigger FERC review. The section has prompted questions about the potential for market power abuse because of the increase in asset value before FERC merger review authority is triggered. However, once it is triggered, FERC is given additional jurisdiction to protect consumer interests.
Market-based rates	Section 205 of the Federal Power Act requires just and reasonable rates to be charged for transmission or sale of electric energy (16 U.S.C. 824d).	*Sec. 203*. FERC may approve market-based rates when the seller and its markets meet certain criteria. When the Commission determines the market-based rate is unjust, unreasonable, unduly discriminatory or preferential, FERC must determine a just and reasonable rate.	No provision.	Provision could limit FERC's options to respond to rates found to be unjust, unreasonable, unduly discriminatory or preferential rates.
Refund effective date	Refunds for rates that FERC finds to be unjust, unreasonable, unduly discriminatory or preferential begin a minimum of 60 days after a complaint is filed (16 U.S.C. 824e(b)).	*Sec. 204*. Section 206(b) of the Federal Power Act is amended to allow the effective date for refunds to begin at the time of the filing of a complaint with FERC but not later than 5 months after filing of a complaint.	No provision.	Currently, refunds begin a minimum of 60 days after the filing of the complaint. This section would allow refunds to be retroactive to the date complaint is filed with FERC.
Open access transmission by certain utilities	The Federal Power Act (Section 201(f)) does not apply to federal Power Marketing Administrations, state entities or rural electric cooperatives (16 U.S.C. 824).	*Sec. 205*. FERC is authorized, by rule or order, to require unregulated transmitting utilities (Power Marketing Administrations, state entities, and rural electric cooperatives) to charge rates comparable to what they charge themselves, and also require that the terms and conditions of the sales are comparable to those required of other utilities. Exemptions are established for utilities selling less than 4 million megawatt-hours of electricity per year and for utilities that own or operate transmission facilities that are not necessary to facilitate a nationwide interconnected transmission system.	No provision.	Expands FERC's transmission authority in ordering open access to include Power Marketing Administrations, state entities and rural electric cooperatives.
Electric reliability standards	No current law.	*Sec. 206*. FERC-approved electric reliability organizations will develop and enforce reliability standards for the bulk-power system. Standards are enforceable by the electric reliability organization and FERC. The provision does not apply to Alaska or Hawaii.	No provision.	Would give an electric reliability organization (currently the North American Electric Reliability Council (NERC)) the primary authority to develop reliability standards.
Market transparency rules	No current law.	*Sec. 207*. Within 180 days after enactment, FERC is required to issue rules to establish an electronic system that provides information about the availability and price	No provision.	

Provision	Current Law	Senate	House	Comments
		of wholesale electric energy and transmission services. Commercial or financial information that FERC determines to be privileged, confidential, or otherwise sensitive is exempt from disclosure.		
Access to transmission by intermittent generators	No specific law.	*Sec. 208.* FERC must require transmitting utilities to provide service to solar and wind generators at rates that do not unduly prejudice or disadvantage the generators for scheduling deviations. FERC may exempt a transmitting utility from the requirements of this provision if the solar and wind generators are likely to have an adverse impact on reliability.	No provision.	Transmitting utilities would be able to charge higher rates to solar and wind generators if the intermittent nature of their electricity generation is likely to have an adverse impact on the reliability of the transmission system.
Enforcement	Electric utilities are subject to the criminal penalty section of the Federal Power Act (16 U.S.C. 825o(c)).	*Sec. 209.* The exemptions from the criminal penalty section of the Federal Power Act (16 U.S.C. 825o(c)) for certain activities including wheeling and sales by Exempt Wholesale Generators are repealed. The civil penalty section of the Federal Power Act (16 U.S.C. 825o-l) is extended to include sections of this Act.	No provision.	

Amendments to the Public Utility Holding Company Act

Provision	Current Law	Senate	House	Comments
Short title	The Public Utility Holding Company Act of 1935 (15 U.S.C. 79 et seq).	*Sec. 221.* This subtitle may be cited as the "Public Utility Holding Company Act of 2002."	No provision.	
Definitions	15 U.S.C. 79b	*Sec. 222.* The following terms are defined: affiliate; associate company; Commission; company; electric utility company; gas utility company; holding company; holding company system; jurisdictional rates; natural gas company; person; public utility; public utility company; state commission; subsidiary company, and voting security.	No provision.	The definitions of the terms affiliate, electric utility company, gas utility company, holding company, holding company system, subsidiary company, and voting security are changed from current law. The terms jurisdictional rates, natural gas company, and public utility are not included in the Public Utility Holding Company Act of 1935.
Repeal of the Public Utility Holding Company Act of 1935 (PUHCA)	In general, the Public Utility Holding Company Act of 1935 regulates the structure of holding companies by prohibiting all holding companies that are more than twice removed from their operating	*Sec. 223.* PUHCA is repealed.	No provision.	Currently under PUHCA, a holding company can acquire securities or utility assets only if the SEC finds that such a purchase will improve the economic efficiency and service of an integrated

Provision	Current Law	Senate	House	Comments
	subsidiaries, federally regulates holding companies of investor-owned utilities, and provides for Securities and Exchange Commission (SEC) regulation of mergers and diversification proposals. Registered holding companies and subsidiaries are required to have SEC approval prior to issuing securities; all loans and intercompany financial transactions are regulated by the SEC; and a holding company can be exempt from PUHCA if its business operations and those of its subsidiaries occur within 1 state or within contiguous states (15 U.S.C. 79 et seq.).			public utility system. It has been argued that reform to allow diversification would improve the risk profile of electric utilities in much the same way as in other businesses: The risk of any one investment is diluted by the risk associated with all investments. However, concerns have been expressed that PUHCA repeal could exacerbate market power abuses in an industry where vigorous competition may not yet exist. State regulators have expressed concerns that increased diversification could lead to such abuses as cross-subsidization: a regulated company subsidizing an unregulated affiliate.
Federal access to books and records	Registered holding companies and subsidiary companies are required to preserve accounts, cost-accounting procedures, correspondence, memoranda, papers, and books that FERC deems necessary or appropriate in the public interest or for protection of investors and consumers (15 U.S.C. 79o).	*Sec. 224.* Federal access is provided to the books and records of holding companies and their affiliates. Federal officials must maintain the confidentiality of such books and records.	No provision.	
State access to books and records	Under the Federal Power Act, state commissions may examine the books, accounts, memoranda, contracts, and records of a jurisdictional electric utility company, an exempt wholesale generator that sells to such electric utility, and any electric utility company or holding company that is an associate company or affiliate of an exempt wholesale generator (16 U.S.C. 824).	*Sec. 225*. A jurisdictional state commission may make a written request to a holding company or any associate company for access to specific books and records, which must be kept confidential. Response to such requests is mandatory. Compliance with this section is enforceable in U.S. District Court.	No provision.	
Exemption authority	No current law.	*Sec. 226.* FERC is directed to promulgate rules to exempt qualifying facilities, exempt wholesale generators, and foreign utility companies from the requirements of Section 224.	No provision.	
Affiliate transactions	The Federal Power Act requires that jurisdictional rates are just and reasonable and prohibits cross-subsidization (16 U.S.C. 791a et seq.).	*Sec. 227.* FERC retains the authority to prevent cross-subsidization and to assure that jurisdictional rates are just and reasonable.	No provision.	
Applicability	No specific provision.	*Sec. 228.* Except as specifically noted, this subtitle does not apply to the United States government, a state or any political	No provision.	

Provision	Current Law	Senate	House	Comments
		subdivision of a state, or a foreign governmental authority operating outside the United States.		
Effect on other Regulations	No specific provision.	*Sec. 229.* FERC or a state commission is not precluded from exercising its jurisdiction under otherwise applicable laws to protect utility customers.	No provision.	
Enforcement	16 U.S.C. 825e-825p	*Sec. 230.* FERC has authority to enforce this provision under sections 306-317 of the Federal Power Act.	No provision.	
Savings provisions	Not applicable.	*Sec. 231.* Persons may continue to engage in legal activities in which they have been engaged or are authorized to engage in on the effective date of the subtitle. The subtitle does not limit the authority of the Federal Energy Regulatory Commission under the Federal Power Act or the Natural Gas Act.	No provision.	
Implementation	Not applicable.	*Sec. 232* Not later than 18 months after enactment, FERC will promulgate regulations necessary to implement this subtitle and submit to Congress recommendations for technical or conforming amendments to federal law that might be necessary to carry out this subtitle.	No provision.	
Transfer of resources	The Securities and Exchange Commission maintains books and records and regulates security transactions (15 U.S.C. 79 e a t seq.).	*Sec. 233.* The Securities and Exchange Commission will transfer all applicable books and records to FERC.	No provision.	No time frame is provided.
Interagency review of competition in the wholesale and retail markets for electric energy	No current law.	*Sec. 234.* An interagency task force is created to perform a study and analysis of electric competition within U.S. wholesale and retail markets. The task force will submit a report not later than 1 year after the effective date of this Act.	No provision.	
GAO study on implementation	No current law.	*Sec. 235.* The General Accounting Office is directed to study the effectiveness of the federal government and the states in: 1) preventing anti-competitive practices; and 2) promoting competition and efficient energy	No provision.	

Provision	Current Law	Senate	House	Comments
		markets that benefit consumers. This report must be submitted to Congress no later than 24 months after the effective date of this Act.		
Effective date	No applicable law.	*Sec. 236.* Eighteen months after enactment, this subtitle will take effect.	No provision.	
Authorization of appropriations	No applicable law.	*Sec. 237.* Necessary funds to carry out this subtitle are authorized to be appropriated.	No provision.	
Conforming amendments to the Federal Power Act	16 U.S.C. 791a et seq.	*Sec. 238.* The Federal Power Act is amended to reflect the changes to the Public Utility Holding Company Act of 1935.	No provision.	

Amendments to the Public Utility Regulatory Policies Act of 1978

Provision	Current Law	Senate	House	Comments
Real-time pricing standard	No current law.	*Sec. 241.* States must consider a standard for real-time pricing of electricity for retail customers. Real-time pricing on the retail level would reflect fluctuations of wholesale rates. Also contains provision on time-of-use metering. In states allowing retail competition, distribution company must provide the same time-of-use metering and communication service to all of its retail customers.	No provision.	Installation of real-time metering and communications technology would be necessary to fully implement retail real-time and time-of-use pricing.
Adoption of additional standards	No current law.	*Sec. 242.* States are required to consider implementation of technical and pricing standards for distributed generation interconnection to the local distribution system, a standard for each electric utility to develop a plan to develop a diverse fuel mix and technology mix for generating electricity, and a standard to increase the efficiency of fossil fuel generators.	No provision.	
Technical assistance	No current law.	*Sec. 243.* The Secretary of Energy is authorized to provide technical assistance to the states to help develop the standards under Section 242.	No provision.	
Cogeneration and small power production purchase and sale requirements	Electric utilities are required to purchase electricity generated by qualifying facilities at the utilities' avoided cost (16 U.S.C. 824a-3).	*Sec. 244.* Mandatory purchase requirements under §210 of the Public Utility Regulatory Policies Act of 1978 (PURPA) will not apply to new contracts after the date of enactment if FERC finds that a competitive electric market exists. FERC may enforce recovery of "stranded costs" incurred by utilities because of PURPA-mandated cogeneration and small power purchases. Ownership limitations under PURPA are repealed.	No provision.	

Provision	Current Law	Senate	House	Comments
Net metering for renewable energy and fuel cells	No current law.	*Sec. 245.* All utilities are subject to net metering requirements. Residential system size limits are 500 kilowatts. State public utility commissions have authority to determine whether mandatory net metering will be implemented within their states.	No provision.	Provision would maintain current state authority to determine whether to implement this section's net metering standard. Currently, 34 states require utilities to provide net metering to some or all classes of customers.

Consumer Protections

Provision	Current Law	Senate	H.R. 4	Comments
Information disclosure	No provision.	*Sec. 251.* The Federal Trade Commission must issue rules requiring electric utilities to provide electric consumers information on the cost and type of service being offered.	No provision.	
Consumer privacy	No current law.	*Sec. 252.* The Federal Trade Commission is directed to issue rules prohibiting an electric utility from sharing its customers' individual information without prior written approval by a consumer.	No provision.	
Office of Consumer Advocacy	No current law.	*Sec. 253.* An Office of Consumer Advocacy is established within the Department of Justice. The Office may represent the interest of energy customers on matters concerning rates or service at FERC hearings, at U.S. court proceedings, and hearings and proceedings of other federal regulatory agencies and commissions.	No provision.	
Unfair trade practices	No current law.	*Sec. 254.* The Federal Trade Commission is required to issue rules prohibiting slamming and cramming.	No provision.	Slamming occurs when an electric utility switches a customer's electric provider without the consumer's knowledge. Cramming occurs when an electric utility adds additional services and charges to a customer's account without the permission of the customer.
Applicable procedures	Administrative Procedure Act (5 U.S.C. 533).	*Sec. 255.* The Federal Trade Commission will adhere to the notice and comment rulemaking procedures under the Administrative Procedure Act (5 U.S.C. Sec. 533) for rules issued under this subtitle.	No provision.	
Federal Trade Commission enforcement	Federal Trade Commission Act (15 U.S.C. 57a).	*Sec. 256.* Violations of rules under this subtitle will be treated as violations of the Federal Trade Commission Act (15 U.S.C. Sec. 57a).	No provision.	
State authority	No applicable law.	*Sec. 257.* States are given authority to prescribe and enforce laws, rules, or procedures regarding the practices of this subtitle.	No provision.	Gives states the right to codify and enforce laws, rules, and procedures that may be in direct conflict with the Consumer Protection subtitle.

Provision	Current Law	Senate	H.R. 4	Comments
Application of subtitle	No applicable law.	*Sec. 258.* This subtitle applies only to electric utilities whose retail sales exceed 500 million kilowatt-hours per calendar year.	No provision.	
Definitions	16 U.S.C. 2602	*Sec. 259.* Defines aggregate consumer information and consumer information. Electric consumer, electric utility, and state regulatory authority have the same meaning as such terms under PURPA.	No provision.	

Renewable Energy and Rural Construction Grants

Provision	Current Law	Senate	House	Comments
Renewable energy production incentive	EPAct Sec. 1212 provides a 1.5 cent/kwh incentive for power produced from wind and biomass by state and local governments and non-profit electrical cooperatives. Funded by appropriations, it was created to parallel the renewable energy production tax credit for businesses (Title XIX).	*Sec. 261.* Eligibility is extended to certain public utilities. Qualifying resources are expanded to include landfill gas, incremental hydro, and ocean energy. Funding for hydro may not exceed 30% of the total.	*Sec. 602.* Qualifying resources are expanded to include landfill gas. Authorizes "such sums," and there is no funding limit for any resource.	The Senate bill extends the eligibility to a broader range of additional sources.
Assessment of renewable energy resources	No existing requirement.	*Sec. 262.* DOE is required to report annually on resource potential, including solar, wind, biomass, ocean, geothermal, and hydro.	*Sec. 601.* DOE is directed to publish an annual report on resource potential.	The provisions are nearly identical except the Senate version includes ocean energy, while the House version does not.
Federal purchase requirement	No existing requirement.	*Sec. 263.* Federal agencies are required to purchase power produced from renewables, starting at 3% in FY2003, and rising to 7.5% in FY2010.	No provision.	Requires that a certain percentage of the total electricity purchased by the federal government be generated from renewable energy sources.
Energy Sun labeling program	No existing program.	No provision.	*Sec. 141A.* A government-industry partnership is established to create an "Energy Sun" labeling program that promotes renewable and alternative energy products.	The features of this new program would parallel the features of the existing Energy Star program for energy-efficient products (see Sec. 926 of the Senate version and

Provision	Current Law	Senate	House	Comments
				Sec. 141 of the House version).
Renewable portfolio standard (RPS)	No existing requirement.	*Sec. 264.* A renewable energy production target is set for retail suppliers, starting at 1% in 2005 and rising to 10% by 2019. Tradable credits are created to help compliance. Eligible renewable resources include solar, wind, geothermal, biomass (including municipal solid waste), landfill gas, a generation offset (on-site renewables generation that reduces demand), and incremental hydropower. The baseline estimate excludes eligible renewables, municipal solid waste, and hydropower. Special credits apply to incremental hydropower, generation offsets, production on Native American lands, and co-firing with conventional resources. A non-compliance penalty is provided.	No provision.	Several states have enacted an RPS. The Senate bill allows states to have a stronger requirement than the federal standard. (Sec. 271 of the Senate bill redefines a 3 cents/kwh credit in Sec. 264 to be 1.5 cents/kwh.)
Renewable energy on federal land	No existing requirement.	*Sec. 265.* The Secretary of the Interior is directed to create a pilot program to develop wind and solar energy on federal lands.	*Sec. 6102.* The Secretary of the Interior is required to inventory the potential to develop solar, wind, geothermal, and coal resources on federal lands. Also, *Sec. 6105* directs, where practicable, the Department of the Interior and the Department of Agriculture to use energy efficient technologies in vehicles and in public and administrative buildings associated with management of the National Park System and other public lands.	The Senate bill requires implementation while the House bill requires a study.
Energy conservation in the Interior Department	No existing requirement.	No provision.	*Sec. 6601.* The Department of the Interior is required to study and report on opportunities to conserve energy in its facilities and to reduce conventional energy use by substituting use of alternative energy sources, including the use of solar power and fuel cells.	

Provision	Current Law	Senate	House	Comments
ANWR revenue for renewable energy	No provision.	No provision.	*Sec. 6512.* Half of the adjusted revenues from bonus payments from oil and natural gas leases in the Arctic National Wildlife Refuge (ANWR) is directed to a new Renewable Energy Technology Investment Fund in the U.S. Treasury Department. The Fund shall be used to finance research and studies on renewable energy and alternative fuels.	
Geothermal energy	Geothermal energy production on federal lands is charged a royalty of 10%-15% (Geothermal Steam Act Sec. 5).	No provision.	*Sec. 6301-6307.* The maximum royalty for existing geothermal leases is reduced from 15% to 8%. Further, the royalty is eliminated over a five-year period for new qualified leases and new qualified expansions of 10% or more. Low temperature (less than 195 degrees Fahrenheit) resources are exempted from royalties, but are instead required to pay a fee ranging from $100 to $1,000. Prohibits geothermal leasing on Forest Service lands if a regional forester determines that the lands cannot be adequately protected. The Interior Department is directed to determine whether pending lease applications require competitive bidding. All public lands controlled by military departments are opened to leasing, subject to Interior Department regulations. Further, the Department is required to review and report on the status of all leasing moratoria and withdrawals from moratoria.	
Reimbursement for costs of NEPA analyses, documentation, and studies for geothermal leasing	No provision.	No provision.	*Sec. 6308.* If adequate appropriated funds are not available to conduct the necessary reviews for a geothermal lease under the National Environmental Policy Act (NEPA) in a timely manner, the Secretary of the Interior may reimburse the lessee or applicant with royalty credits for conducting the NEPA work.	
Carpet waste as alternative energy source	No existing requirement.	No provision.	*Sec. 801.* DOE is authorized funding to support a single grant to develop the	

Provision	Current Law	Senate	House	Comments
			feasibility of burning post-consumer carpet in cement kilns as an alternative energy source.	

General Provisions

Provision	Current Law	Senate	House	Comments
Change RPS price cap from 3 cents to 1.5 cents	No provision.	*Sec. 271.* The 3 cent/kwh price cap for tradable credits in Sec. 264, which establishes a renewable portfolio standard (RPS), shall be considered 1.5 cents/kwh.	No provision.	
Bonneville Power Administration Bonds	Current BPA borrowing authority is $3.75 billion (16 U.S.C 838k, P.L. 98-50).	*Sec. 272.* Bonneville Power Administration borrowing authority is increased by $1.3 billion to provide transmission system improvements.	No similar provision	In the FY2003 Congressional Budget Request, BPA requested an increase of $700 million in borrowing authority.

Hydroelectric Relicensing

Provision	Current Law	Senate	House	Comments
Alternative conditions and fishways	No provision.	*Sec. 301 (a) and (b).* Agencies imposing conditions or prescribing fishway construction on hydropower license applicants under Section 4(e) and Section 18 of the Federal Power Act must consider alternative measures proposed by the applicant, and accept those alternative measures if the alternative condition "provides for the adequate protection and utilization of the reservation," or if the alternative fishway "will be no less protective of the fish resources than the fishway initially prescribed," and would either cost less or result in more power production. No provision in this section prohibits other interested parties from proposing alternative conditions.	*Sec. 401 (a) and (b).* Agencies imposing conditions or prescribing fishway construction on hydropower license applicants under Section 4(e) and Section 18 of the Federal Power Act must consider alternative measures proposed by the applicant, and accept those alternative measures if the alternative condition "provides no less protection for the reservation," or if the alternative fishway "will be no less effective than the fishway initially prescribed," and would either cost less or result in more power production.	Senate language substituting "fish resources" for "fishway" is aimed at protecting "all fish resources, not just those fish species that are harvested either commercially already or with sport fishery," according to Senator Smith.

Provision	Current Law	Senate	House	Comments
Time of filing application	License applicants must file 24 months prior to expiration of old license.	*Sec. 301 (c).* License applicants must file 36 months prior to expiration for licenses that expire in 2008 and thereafter.	No similar provision.	Aimed at reducing the number of annual interim licenses that "do not provide certainty for consumers or the utility and result in delays in environmental mitigation and enhancement," according to Senator Smith.
Data collection procedures		No similar provision.	*Sec. 402.* The Federal Energy Regulatory Commission must collect data on the time and costs involved in the hydro licensing process.	
Study of increasing power production at existing hydroelectric facilities	No provision.	No provision.	*Sec. 6401.* Within 12 months of enactment, the Secretary of the Interior will submit a study that describes existing capacity at hydroelectric facilities under Interior Department jurisdiction. In addition, the study will identify costs of producing additional hydroelectric power from each facility as well as describe the impact that increased hydroelectric production would have on irrigation, fish, wildlife, Indian tribes, river health, water quality, navigation, recreation, fishing, and flood control.	
Installation of powerformer at Folsom Power Plant, California	No provision.	No provision.	*Sec. 6402.* The Bureau of Reclamation may borrow from the United States Treasury the cost of a powerformer to be installed at the Bureau of Reclamation's Folsom Power Plant in California. The Secretary of the Interior is also directed to seek contributions from power users.	A powerformer would replace both the generator and transformer. This new technology increases the overall efficiency of plant operations and generates electricity at voltage levels necessary for electricity to be placed directly on the transmission grid.
Study of increased operational efficiencies at hydroelectric projects	No provision.	No provision.	*Sec. 6403.* The Secretary of the Interior is to conduct a study to determine whether operational methods and water scheduling techniques could be modified at hydroelectric facilities with capacity greater than 50 megawatts to maximize energy production. Within 18 months of enactment, the Secretary will submit a report on the Department's findings.	
Electricity savings at Bureau of Reclamation pumping facilities	No provision.	No provision.	*Sec. 6404.* With the consent of irrigation customers, the Bureau of Reclamation will shift its water pumping operations to periods of off-peak electricity demand. This section does not affect any existing	

Provision	Current Law	Senate	House	Comments
			obligations to provide electric power, water, or other benefits from Bureau of Reclamation facilities.	

Indian Energy

Provision	Current Law	Senate	House	Comments
Buy Indian Act	No energy provision.	No similar provision	*Sec. 6602.* Amends "Buy Indian Act" to include energy products.	
Comprehensive Indian energy program	No provision.	*Sec. 401*. A comprehensive Indian energy program at the DOE is established to assist tribes in meeting their energy needs and expanding opportunities to develop energy resources on tribal lands. A grant program and a loan guarantee program for Indian energy development are established. Federal agencies may give a preference to purchasing Indian energy.	No similar provision	
Office of Indian Energy Policy and Programs	No provision.	*Secs. 402-403*. Within the DOE, an Office of Indian Energy Policy and Programs is created to administer the programs from the previous section, 401. Appropriations are authorized.	No similar provision	
Siting energy facilities on tribal lands	No provision.	*Sec. 404*. Indian tribes may directly lease land and rights-of-way for energy facilities, without case-by-case review by the Secretary of the Interior, if the tribe develops, and the Secretary approves, tribal regulations, and the term of the lease does not exceed 30 years.	No similar provision	
Indian mineral development act review	No provision.	*Sec. 405.*The Secretary of the Interior is required to undertake a review and make recommendations regarding tribal opportunities under the Indian Mineral Development Act.	No similar provision	
Renewable energy study	No provision.	*Sec. 406*. The Secretary of Energy is required to report on energy consumption and renewable energy development potential on Indian land, including identification of barriers to the development of renewable energy on tribal land.	No similar provision	
Federal Power Marketing Administrations	None	*Sec. 407*. The Bonneville Power Administration and Western Area Power Administration are authorized to assist in developing distribution systems that provide power to Indian tribes using the federal transmission system.	No similar provision	
Feasibility study of combined wind and hydropower demonstration project	None.	*Sec. 408*. DOE, in conjunction with the Army and the Interior Department, is to study the feasibility of obtaining a marketable, firm electricity source from wind energy generated on tribal lands connected with hydropower generated by the U.S. Army Corp of Engineers at the Missouri River powerplants.	No similar provision	

Nuclear Power

Price-Anderson Act Reauthorization

Provision	Current Law	Senate	House	Comments
Short Title	The Price-Anderson Act, dealing with liability for nuclear accidents, generally consists of Sec. 170 of the Atomic Energy Act of 1954 (AEA, 42 U.S.C. 2210). Key terms are defined at 42 U.S.C. 2014.	*Sec. 501.* This subtitle (sections 501-509) may be cited as the "Price-Anderson Amendments Act of 2002."	No provision.	The House-passed version of H.R. 4 does not contain Price-Anderson provisions; they were included in a separate bill (H.R. 2983) passed by the House on November 27, 2001, described below: *H.R. 2983 Sec. 1.* This Act may be cited as the "Price-Anderson Reauthorization Act of 2001."
Extension of NRC indemnification authority for commercial nuclear power plants and other licensees	Nuclear Regulatory Commission (NRC) authority to provide indemnification under Price-Anderson to new reactors and other licensees expires August 1, 2002 (AEA Sec. 170 c.).	*Secs. 502(a), 502(c).* NRC indemnification authority is extended through August 1, 2012.	No provision.	*H.R. 2983 Secs. 2(a), 2(c).* NRC indemnification authority is extended through August 1, 2017. (Without the extension, existing reactors would continue to be covered by Price-Anderson, but new reactors would not.) *Sec. 14.* Before providing Price-Anderson coverage to a new reactor, NRC must consult with the Office of Homeland Security about whether the reactor's design and location provide adequate public protection in case of a terrorist attack.
Extension of DOE indemnification authority for nuclear contractors	DOE authority to indemnify nuclear contractors against radiological damage claims by members of the public expires August 1, 2002 (AEA Sec. 170 d.).	*Sec. 502(b).* DOE's indemnification authority is extended indefinitely.	No provision.	*H.R. 2983 Sec. 2(b).* DOE indemnification authority is extended through August 1, 2017. (Without an extension, new DOE contracts would not include Price-Anderson indemnification, although existing contracts would still be covered.)
Nuclear incident liability limits	The liability limit for public damages resulting from a nuclear incident by a DOE contractor is about $9.5 billion. The contractor liability limit is based on the limit for commercial nuclear reactors (AEA Sec. 170 d.). The commercial reactor liability limit is equal to the maximum available liability insurance, plus maximum contributions of $63 million per reactor (adjusted for inflation since 1988), plus a 5% surcharge, currently totaling about $9.5 billion. Compensation contributions are paid at a rate of no more than $10 million per reactor per year (AEA Sec. 170 b.).	*Sec. 503.* The DOE contractor liability limit is raised to $10 billion, subject to an inflation adjustment under Section 506.	No provision.	*H.R. 2983, Sec. 4.* Same as Senate bill. *Sec. 3.* Maximum total contributions by each commercial reactor following an accident are raised to $94 million (to be adjusted for inflation every five years after enactment). Maximum annual contributions per reactor are raised from $10 million to $15 million, to be adjusted for inflation. Total available reactor incident compensation increases to about $10 billion. The Senate bill leaves the current reactor incident compensation formula unchanged.

Provision	Current Law	Senate	House	Comments
Incidents outside the United States	The liability limit for nuclear incidents outside the United States is $100 million (AEA Sec. 170 d., e.).	*Sec. 504.* The limit is raised to $500 million.	No provision.	*H.R. 2983, Sec. 5.* Same as Senate bill. *Sec. 10.* The federal government may not accept liability for nuclear incidents in nations found to support terrorism.
Reports on Price-Anderson extension or modification	No future reports on this subject required.	*Sec. 505.* DOE and the Nuclear Regulatory Commission (NRC) shall submit reports to Congress by August 1, 2008, to recommend continuation or modification of the Price-Anderson Act.	No provision.	*H.R. 2983, Sec. 6.* Same reports as the Senate bill, but the deadline is August 1, 2013.
Inflation adjustment for liability limits	NRC every five years must adjust for inflation, using the aggregate percentage change in the Consumer Price Index, the maximum compensation contribution that each reactor must make following a nuclear incident (AEA Sec. 170 t.). If the NRC inflation adjustment raises the reactor liability limit above the existing DOE contractor limit, the contractor limit is raised to the same level (AEA Sec. 170 d.).	*Sec. 506.* In addition to the NRC inflation adjustment, DOE must make a similar adjustment of the $10 billion nuclear contractor accident liability limit every five years.	No provision.	*H.R. 2983, Sec. 7.* Similar to Senate bill. (The House and Senate bills would eliminate the existing link between commercial reactor and DOE contractor liability limits, requiring a separate inflation adjustment for DOE contractors.)
Civil penalties for DOE nuclear contractors	Specific nonprofit DOE contractors who violate nuclear safety regulations are exempt from civil penalties. DOE may automatically remit nuclear safety fines paid by any nonprofit educational institution (AEA Sec. 234A.).	*Sec. 507.* The exemption for specific nonprofit DOE contractors is replaced by provisions limiting nuclear safety penalties on any nonprofit contractor to the amount of the management fee it has earned under a DOE contract within any one-year period. DOE authority to remit fines paid by nonprofit educational institutions is repealed.	No provision.	*H.R. 2983, Sec. 16.* Similar to Senate bill. *Sec. 13.* Indemnified nuclear contractors at DOE non-weapons sites must follow industrial safety rules equivalent to those of the Occupational Safety and Health Administration and pay civil penalties for violations. *Sec. 15.* If DOE has to pay compensation for an accident caused by the intentional misconduct of a for-profit contractor, the Attorney General may file a lawsuit to recover such compensation from the contractor, up to the amount of profit earned on the contract.
Treatment of modular reactors	All commercial nuclear reactors with electric generating capacity of 100 megawatts or more are subject to Price-Anderson's maximum payments for accident damages and requirements for insurance coverage (AEA Sec. 170 b.).	*Sec. 508.* Two or more reactors at a single site, each with electric generating capacity of 100-300 megawatts and totaling no more than 1,300 megawatts, shall be treated as a single reactor in assessing accident compensation contributions and insurance requirements.	No provision.	*H.R. 2983, Sec. 8.* Same as Senate bill. (This provision would allow a "modular" nuclear plant made up of several small reactors to purchase insurance coverage as if the plant consisted of a single reactor. The entire modular plant also would only be liable for the accident compensation payments of a single reactor.)
Effective date	Not applicable.	*Sec. 509.* The increased nuclear liability limits in this subsection shall apply only to	No provision.	*H.R. 2983, Sec. 9.* Same as Senate bill.

Provision	Current Law	Senate	House	Comments
		accidents that occur after the date of enactment.		

Miscellaneous Provisions

Provision	Current Law	Senate	House	Comments
Government uranium stockpile sales	DOE may sell its uranium stockpiles under certain conditions (42 U.S.C. 2297h-10).	*Sec. 511*. With certain exceptions, DOE uranium sales are restricted to 3 million pounds per year from 2003-2009, rising to 10 million pounds per year after 2012.	*Sec. 309*. The federal government is prohibited from selling or transferring any uranium through March 23, 2009, except for emergencies and certain prior commitments. Sales of government-owned uranium after that date are limited to three million pounds per year.	
Thorium cleanup reimbursement	DOE is authorized to reimburse up to $140 million in government-related cleanup costs to the owner of a thorium processing site (42 U.S.C. 2296a).	*Sec. 512*. The thorium reimbursement authorization is raised to $365 million.	No provision.	Senate language is nearly identical to thorium reimbursement provisions in H.R. 3343, passed by the House December 18, 2001.
Fast Flux Test Facility	No comparable provision.	*Sec. 513*. DOE is prohibited from restarting the Fast Flux Test Facility (FFTF), a test reactor at Hanford, Washington, if the proposed missions can be conducted at other facilities that are already operating.	No provision.	Sec. 2344(c) of the House bill prohibits nuclear energy operation and maintenance funds from being used for FFTF, although restart is not specifically mentioned. DOE announced December 19, 2001, that FFTF would be permanently closed.
Nuclear Power 2010 Program	No specific provision.	*Sec. 514*. DOE shall conduct a cost-shared program with industry to "allow for the construction and startup of new nuclear plants in the United States by 2010."	No specific provision.	DOE is currently conducting a Nuclear Power 2010 program within the Nuclear Energy Technologies program.
Spent Nuclear Fuel Research	DOE shall conduct a research program on alternative means and technologies for disposal of high-level radioactive	*Sec. 515*. A DOE Office of Spent Nuclear Fuel Research is established to research, develop, and demonstrate technologies for treatment, recycling, and disposal of spent nuclear fuel and high-level radioactive	*Sec. 2321*. DOE's Office of Nuclear Energy, Science, and Technology shall conduct a research and development program on advanced technologies for the reprocessing of spent nuclear fuel.	Spent fuel recycling or reprocessing involves the extraction of plutonium and uranium from spent nuclear fuel for use in new fuel. Supporters contend that it could extend domestic energy supplies and reduce the hazard posed by nuclear

Provision	Current Law	Senate	House	Comments
	waste (42 U.S.C. 10202).	waste. The technologies should be based on reactors and accelerators and minimize nuclear weapons proliferation concerns.	The technologies should be resistant to nuclear weapons proliferation and support alternative spent fuel disposal strategies.	waste, while opponents are concerned that the extracted plutonium could be used for weapons. DOE currently plans to use reprocessing technology to treat spent fuel from the closed Experimental Breeder Reactor-II in Idaho.
Reactor Decommissioning Pilot Program	No provision.	*Sec. 516.* DOE shall decontaminate and decommission the sodium-cooled test reactor in northwest Arkansas.	No provision.	

Growth of Nuclear Energy

Provision	Current Law	Senate	House	Comments
Commercial reactor license period	For a commercial nuclear reactor that receives a combined construction and operating license from the Nuclear Regulatory Commission (NRC), the initial 40-year license period could begin when NRC grants a combined license for a reactor, before construction has started and years before the start of operation (AEA Section 103 c.).	*Sec. 521.* A reactor's operating period under a combined license shall be no shorter than if separate construction and operating licenses had been issued.	*Sec. 301.* The 40-year license period for a combined license will not begin until NRC determines that the completed reactor is ready to start operating.	Both provisions would provide the longest potential operating period for new reactors under a 40-year combined license (which can be renewed).

NRC Regulatory Reform

Provision	Current Law	Senate	House	Comments
Commercial reactor antitrust reviews	NRC must provide copies of commercial reactor license applications to the Attorney General, who must review them for antitrust problems within 180 days. If problems are found, the Attorney General may become a party to the licensing proceedings (42 U.S.C. 2135).	*Sec. 531.* After receiving notice from NRC, the Attorney General shall review commercial license applications for antitrust problems within 90 days. Other antitrust review procedures shall not apply to new commercial reactor license applications.	No provision.	
Protection of reactor decommissioning funds	No specific provision.	*Sec. 532.* Funds set aside for decontamination and decommissioning of commercial nuclear reactors shall not be used to satisfy creditors for unrelated purposes. Similar protection is provided to insurance payments for nuclear incidents under the Price-Anderson Act.	No provision.	

NRC Personnel Crisis

Provision	Current Law	Senate	House	Comments
Elimination of pension offset for critical NRC personnel	No provision.	*Sec. 541.* If NRC has a critical need for the skills of a retired employee, NRC can hire the retiree as a contractor and exempt him or her from the annuity reductions that would otherwise apply.	No provision.	
NRC training program	No specific provision.	*Sec. 542.* Funding is authorized for NRC to carry out a training and fellowship program to develop critical nuclear safety skills.	No provision.	
NRC cost recovery from other government agencies	Federal agencies must pay fees to NRC for certain licensed activities (AEA Sec. 161 w.).	No provision.	*Sec. 302.* NRC may impose licensing and other cost-based fees on all NRC-licensed activities conducted by other federal agencies.	
Extension of limitation on depleted uranium funds	An account in the Treasury must be preserved through FY2002 to pay for treatment of depleted uranium hexafluoride at former DOE plants in Ohio and Kentucky (P.L. 105-204).	No provision.	*Sec. 303.* The depleted uranium treatment account must be preserved for that purpose through FY2005.	
Transcripts of NRC meetings	No provision.	No provision.	*Sec. 304.* If a quorum of NRC Commissioners meets to discuss official business, a transcript of non-confidential discussions at the meeting must be made available to the public.	
Paducah enrichment plant decommissioning plan	No provision.	No provision.	*Sec. 307.* The Secretary of Energy must submit a plan to Congress for decontaminating and decommissioning surplus facilities and DOE material storage areas at the Paducah, Kentucky, uranium enrichment plant.	
Feasibility of locating commercial reactors at DOE sites	No provision.	No provision.	*Sec. 308.* The Secretary of Energy must determine the feasibility of building commercial nuclear power plants at existing DOE sites.	

Oil and Gas Production

Provision	Current Law	Senate	House	Comments
Permanent authority to operate the Strategic Petroleum Reserve	The SPR requires periodic reauthorization.	*Sec. 601.* Authorization of the Strategic Petroleum Reserve is made permanent, subject to appropriations. This eliminates the need for periodic reauthorization.	No comparable provision.	This provision would avoid periods such as was experienced in 2000, when authorization expired at the end of March and Congress was unable to reach agreement on reauthorization until November.
Federal oil and gas management	The Mineral Leasing Act of 1920, as amended, provides the authority for onshore federal lands to be leased for a specified period of time for oil and gas development.	*Sec. 602.* The Secretary of the Interior shall ensure timely action on applications for oil and gas leases and drilling permits on federal lands.	*Sec. 6221-6225.* The Secretaries of Agriculture and the Interior must conduct a study of "impediments" to oil and gas leasing on federal lands. The Secretary of the Interior must eliminate unwarranted denials and stays of lease issuances.	
Federal oil and gas acreage limitations	Current acreage limitations, royalty policies and reclamation requirements for oil and gas are spelled out in the Mineral Leasing Act of 1920 (30 U.S.C. 181).	*Secs. 603.* Lease acreage limitations are altered.	No provision.	
Orphaned wells on federal land	Mineral Leasing Act of 1920.	*Sec. 604.* The Secretary of the Interior, in cooperation with the Secretary of Agriculture, shall establish a program that ensures the remediation of orphaned wells on federal land.	No provision.	
Federal technical assistance for abandoned oil and gas wells	Mineral Leasing Act of 1920.	*Sec. 605.* The Secretary of Energy shall establish a technical assistance program to help states quantify and mitigate risks from abandoned wells.	No provision.	
Offshore oil and gas suspensions	Outer Continental Shelf Lands Act (43 U.S.C. 1334).	*Sec. 606.* The Minerals Management Service (MMS) can suspend offshore oil and gas operations to reevaluate geological data if the suspension would prevent waste from unnecessary well drilling.	*Sec. 6231.* The Secretary of the Interior may allow suspension of operations under any OCS oil and gas lease to allow time for reinterpretation of exploratory data under salt sheets.	
Offshore oil and gas royalties	The Deepwater Royalty Relief Act of 1996 (DWRRA) established the depths at which a specified amount of production is exempt from	No provision.	*Sec. 6201-6204.* The Royalty Relief Extension Act of 2001 extends the original Deepwater Royalty Relief Act of 1995 for two years.	

Provision	Current Law	Senate	House	Comments
	royalties for leases held between 1996-2000. New rules modified the DWRRA for leases held after November 2000.			
Coalbed methane study	Coalbed methane R&D is carried out by the DOE and funded through the Interior and Related Agencies Appropriation Bill.	*Sec. 607.* The Secretary of the Interior and others shall study the effects of coalbed methane production on water resources.	No provision.	
Oil and gas production royalty and tax policy evaluation	Mineral Leasing Act of 1920.	*Sec. 608.* The Secretary of Energy and others must evaluate the effect of oil and gas royalty and tax policies on oil and gas production.	No provision.	
Strategic Petroleum Reserve (SPR)	The SPR was initially authorized in 1975 (P.L. 94-163).	*Sec. 609.* The President must fill the SPR to its current capacity "as soon as practicable" by the "most practicable and cost-effective means."	No comparable provision.	
Hydraulic fracturing	No provision.	*Sec. 610.* EPA is required to conduct a study of the effects of hydraulic fracturing of hydrocarbon-bearing geologic formations on underground sources of drinking water and determine whether regulation is necessary. If regulations are deemed unnecessary, states will be relieved from further obligation to regulate hydraulic fracturing.	No provision.	
Safe Drinking Water grant and preservation of oil and gas resource data	No provision.	*Secs. 611-612.* Funding is authorized for a grant to Alabama under the Safe Drinking Water Act, and the U.S. Geological Survey may preserve and provide public access to oil and gas resource data.	No provision.	
Federal oil and gas royalties-in-kind and other provisions	Royalty -in-kind authority is provided by the Outer Continental Shelf Lands Act of 1953, as amended (43 U.S.C 1331, et. seq.). A provision in the FY2002 Energy and Water Development bill (P.L. 107-66) bans oil and gas drilling in the Great Lakes.	No provisions.	*Secs. 6232-6235.* When the federal government sells any physical quantities of oil and gas received as royalty-in-kind payments, it must sell it for market value and must receive revenues greater than or equal to those received under a comparable cash payment royalty. States and provinces around the Great Lakes are encouraged to prohibit or cease offshore oil and gas drilling in the Great Lakes.	The Great Lakes issue became one of state versus federal control over oil and gas development, particularly in Lake Michigan. In February 2002 the Michigan legislature approved a bill to ban oil and gas drilling in the Great Lakes. Michigan Governor Engler did not oppose the measure.

Provision	Current Law	Senate	House	Comments
Coal leasing in the Powder River Basin	Coal is currently being leased on federal lands under the Mineral Leasing Act of 1920 (30 U.S.C.181).	*Sec. 613.* The Secretary of the Interior shall report to Congress on plans to resolve conflicts between development of coal and coalbed methane in the Powder River Basin.	No provision.	The Bureau of Land Management can issue development leases for two different resources on the same tract of land. The potential for conflict arises from overlapping coal and gas leases in the Powder River Basin.

Natural Gas Pipelines

Alaska Natural Gas Pipeline

Provision	Current Law	Senate	House	Comments
Short title and purposes	The Natural Gas Act (NGA) gives FERC authority to certificate interstate pipelines. The Alaska Natural Gas Transportation Act (ANGTA), 15 U.S.C. 719, creates a process where a project in the Alaska Natural Gas Transportation System may be recommended and approved.	*Secs. 701 and 703.* This subtitle may be called the "Alaska Natural Gas Pipeline Act of 2002." Its purpose is to expedite the completion of one or more pipelines to deliver Alaskan natural gas to the contiguous 48 states.	No provision.	
Findings	No provision.	*Sec. 702.* North Slope gas supply is declared to be in the national interest.	No provision.	FERC has issued a certificate for the Alaska Gas Transport System
Expedited certification	ANGTA, NGA both address this matter.	*Sec. 704.* FERC must issue a certificate for a proposed Alaskan gas pipeline based on Natural Gas Act criteria, notwithstanding the Alaska Natural Gas Transportation Act. A certificate must be issued within 60 days of a final environmental impact statement.	No provision.	
Prohibition on certain pipeline route	No provision.	*Sec. 704(d).* No federal approval may be granted for any natural gas pipeline transiting submerged lands or the shoreline of the Beaufort Sea, nor for any gas pipeline crossing the U.S.-Canadian border north of 68 degrees north latitude.	Sec. 701. Same.	This prohibition would block proposed natural gas pipeline routes from the Alaska North Slope that could open the U.S. market to Arctic Canadian natural gas resources.

Provision	Current Law	Senate	House	Comments
Environmental reviews	The National Environmental Policy Act (NEPA) calls for environmental review and analysis.	*Sec. 705.* FERC is designated as the lead agency for environmental reviews of an Alaska gas pipeline. FERC must issue a draft environmental impact statement (EIS) within 12 months after determining the pipeline certificate application is complete. The final EIS is to be issued 6 months after the draft statement.	*Sec. 6503(c).* Parameters are set for NEPA reviews of oil and gas leases on the ANWR Coastal Plain.	
Pipeline expansion	No provision.	*Sec. 706.* FERC has authority to order pipeline expansion, contingent upon approved tariffs and firm shipper agreement.	No provision.	
Federal coordinator	No provision.	*Sec. 707.* A new executive branch office, the Federal Coordinator for Alaska Natural Gas Transport Projects, is established to coordinate the expeditious discharge of all federal agency activities and compliance with this act.	No provision.	
Judicial review	No specific provision.	*Sec. 708.* Legal challenge to agency actions under this bill are directed to the U.S. Court of Appeals for the D.C. Circuit.	*Sec. 6508.* Issues relating to Coastal Plain referred to U.S. Court of Appeals, D.C. Circuit	
State jurisdiction over in-state gas delivery	No specific provision.	*Sec. 709.* Intrastate gas deliveries will not be regulated by FERC.	No provision.	Treats sales of gas from this pipeline as intrastate transactions.
Loan guarantee	No provision.	*Sec. 710.* Loan guarantees of up to $10 billion are provided for an Alaska gas transport system certified by FERC. Project sponsors are required to "put 20% down"; other terms and conditions are to be worked out by the Secretary of Energy.	No provision.	
Study of alternative means of construction	No provision.	*Sec. 711.* If no commercial pipeline application is filed within 18 months of enactment, DOE is instructed to conduct a study of having the project undertaken by a government corporation.	No provision.	
Clarification of Alaska Natural Gas Transport Act (ANGTA) and authority to amend terms and conditions to meet current project requirements	No provision.	*Sec. 712.* Nothing in this bill affects ANGTA. DOE has authority to amend existing transport plan to bring it up to date.	No provision.	

Provision	Current Law	Senate	House	Comments
Definitions	No provision.	*Sec. 713.* This section defines the concept of Alaska natural gas as applying to the North Slope, including the Continental Shelf. It also defines the pipeline system as that part within the United States, and subject to FERC jurisdiction.	No provision.	
Sense of the Senate	No provision.	*Sec. 714.* It is the sense of the Senate that commercialization of Alaskan gas is economically important to both the United States and Canada. It is urged that North American steel be used in pipeline construction, and that the project sponsors negotiate a project labor agreement to expedite construction.	No provision.	
Pipeline construction training program	No provision.	*Sec. 715.* The Secretary of Labor is to report to Congress within 6 months on the training requirements needed for Alaska residents to participate in pipeline construction. The Secretary is tasked with establishing such program within 1 year of the report.	No provision.	

Operating Pipelines

Provision	Current Law	Senate	House	Comments
Historic Preservation Act and pipeline environmental review	No provision.	*Sec. 721* The Chairman of the Council on Environmental Quality (CEQ), in coordination with the Chairman of FERC, is to form an interagency task force that will develop an interagency memorandum of understanding to expedite pipeline projects. The task force is to consist of the lead agency chairs, and the heads of BLM, the Fish and Wildlife Service, Corps of Engineers, Forest Service, EPA, and the Advisory Council on Historic Preservation.	*Sec. 6104.* The Secretary of Energy, in coordination with FERC, must form a task force of the relevant agencies to develop an interagency agreement to expedite the approval of pipeline projects. *Sec. 702.* Pipelines are exempted from the National Register of Historic Places under the National Historic Preservation Act (NHPA) unless they have been abandoned or their owners consent to such inclusion.	Among the perceived bottlenecks in the approval of new gas pipeline projects that the Bush Administration seeks to streamline is the environmental review process. At issue regarding historic preservation is whether pipeline companies needing FERC approval to expand or renovate facilities should be compelled by FERC to fund and perform historical documentation and preservation.

Pipeline Safety

Provision	Current Law	Senate bill	House bill	Comments
Short Title; Amendment of Title 49 U.S.C.	Title 49 of the U.S. Code includes federal law outlining many of the legal authorities for federal activities, including regulation and enforcement, that influence the safety and security of pipeline infrastructure.	*Sec. 741.* This subtitle (sections 741-783) may be cited as the "Pipeline Safety Improvement Act of 2002."	No provision.	*Secs. 741-783* include the previously passed Senate pipeline safety bill (S. 235) (with minor changes) and several provisions pertaining to pipeline security and related issues.
Pipeline Safety Improvement Act of 2002	Pipeline safety provisions are located 49 U.S.C. 601.	*Secs. 742-765.* To address concerns regarding human errors causing pipeline releases, operators are required to prepare a plan that would be designed to enhance the qualifications of pipeline personnel and to reduce the likelihood of accidents. The plan is to provide for training and periodic reexamination of pipeline personnel. The Secretary of Transportation is authorized to certify that those plans are sufficient to ensure continuation of safety operations (Sec. 763). To enhance the safety of pipeline operations, companies are required to implement integrity management plans for interstate pipelines that traverse environmentally sensitive areas and high density population areas. Each operator's plan would need to be based on risk analysis and include periodic assessment of the integrity of the pipeline no less than every five years unless certain conditions are met (Sec. 764).	No provisions.	Selected pipeline safety provisions are described.
Pipeline safety education, state oversight, and authorizations	49 U.S.C. 601	*Secs. 766-778.* To reduce damage to infrastructure caused by third parties, each owner or operator of a pipeline facility is required to carry out a continuing program to educate the public regarding pipeline safety, including providing information on the use of one-call notification systems prior to excavation (Sec. 766). Operators must maintain liaison with various state or local entities and provide information, upon their request, on the integrity management program implemented at a facility and other aspects of facility operations, including the location of pipelines (Sec. 768). For FY2003 through FY2005, the Office of Pipeline Safety program is authorized at specified levels of funding, with amounts set aside to carry out pipeline integrity program and research and development activities (Sec. 772).	No provision.	
New England pipeline transmission and storage study	No provision.	*Sec. 779.* FERC, in conjunction with DOE, is to conduct a study of the pipeline transmission system and storage facilities in New England, and determine its adequacy to meet current and projected consumer and power generation needs, as well as seasonal demands. The study should identify potential transport bottlenecks and deficiencies in the environmental review and permitting process. A report to the Senate	No provision.	

Provision	Current Law	Senate bill	House bill	Comments
		Energy and Natural Resources Committee and relevant House committee is required within 120 days of enactment.		
Pipeline security-sensitive information and criminal penalties	49 U.S.C. 601	*Secs. 780-783.* To enhance pipeline security, if the Department of Transportation obtains security-sensitive information regarding pipelines, such information shall be released only with adequate protection to specified parties (Sec. 781), and criminal penalties are provided for damaging or destroying pipeline facilities (Sec. 783).	No provision.	

Fuels and Vehicles

CAFE Standards, Alternative Fuels, and Advanced Technology

Provision	Current Law	Senate	House	Comments
Increased fuel economy standards	The Energy Policy and Conservation Act (P.L. 94-163), enacted in 1975, established procedures whereby the National Highway Traffic Safety Administration (NHTSA) follows a rulemaking process to establish model year CAFE standards for passenger automobiles and light-duty trucks. Fuel economy of passenger automobiles is currently 27.5 mpg; light-duty truck CAFE is 20.7 mpg.	*Sec. 801.* The Secretary of Transportation must issue not later than 15 months after enactment "new regulations setting forth increased fuel economy standards" reflecting "maximum feasible fuel economy levels" consistent with factors set out in the original CAFE legislation (P.L. 94-163). (However, Sec. 811 freezes "pickup truck" CAFE at 20.7 mpg.) An environmental assessment is required of the effects of the new standards, and $2 million is authorized to carry out this section.	*Sec. 201.* The Secretary of Transportation must establish fuel economy standards for light-duty trucks manufactured in model years 2004-2010 that will result in a gasoline consumption savings of at least 5 billion gallons of gasoline from what this portion of the fleet would have consumed had the standard for this segment of the vehicle fleet remained at 20.7 miles-per-gallon.	Some argue that the savings called for in the House bill could be achieved with an increase in light-truck CAFE of 1-2 mpg. The Senate provision freezing the CAFE standard for "pickup trucks," which are undefined, will narrow the scope of the Senate language. Concurrent with congressional consideration of energy legislation, the Administration, on Feb. 7, 2002, issued a request for comments on CAFE standards for passenger cars and light trucks for some or all of model years 2005-2010, taking into account the National Academy of Sciences (NAS) study on fuel economy released in 2001, and other issues.
Expedited procedures for congressional increase in fuel economy standards.	No current law.	*Sec. 802.* In the event that the Secretary of Transportation does not comply with Sec. 801 within 15 months of enactment, Congress may establish	No comparable provision.	Sec. 802 does not specify a specific CAFE standard that Congress may enact under expedited procedures.

Provision	Current Law	Senate	House	Comments
		CAFE standards under expedited procedures.		
Considerations to be taken into account in setting maximum feasible average fuel economy standards	Current law requires Secretary of Transportation to consider "technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy." [49 Sec. 32902(2)(f)]	*Sec. 803.* In addition to considerations in current law, the Secretary of Transportation must consider: (1) CAFE effects on reducing U.S. dependence on imported oil; (2) motor vehicle and passenger safety; (3) air quality; (4) the relative competitiveness of manufacturers; (5) levels of employment in the United States; (6) the cost and lead time for new technologies; (7) potential benefits of advanced technology vehicles; (8) impact of manufacturers' near-term compliance costs on their ability to develop advanced technologies (9) the January 2002 CAFE report of the National Research Council.	No comparable provision.	The Senate legislation considerably lengthens the number of conditions to be analyzed and weighed by the National Highway Traffic Safety Administration in setting standards. The implications, if any, for the rule-making process are unclear. It is possible that these new considerations, if retained in the final bill, will be legally challenged and might delay the rulemaking process as amended by the legislation.
Consideration of prescribing different average fuel economy standards for non-passenger automobiles	No current law.	No comparable provision.	*Sec. 202.* The Secretary of Transportation will consider the merits and benefits of basing fuel economy standards for light-duty vehicles upon some measure of vehicle weight. The Secretary should consider any recommendations made by the National Academy of Sciences in its fuel economy study. If a weight-based system is adopted, an individual manufacturer could trade credits among the different models produced by that manufacturer.	The original distinction between cars and light trucks in the Energy Policy and Conservation Act (P.L. 94-163) assumed that vehicles dedicated to passenger travel would be subject to tougher CAFE standards, whereas light-duty trucks intended for hauling and other commerce would be required to meet an appropriately less stringent standard. In recent years, it has become apparent that vehicles such as sport utility vehicles (SUVs) – which otherwise meet the definition of "light duty trucks" – are being used as passenger vehicles but are not held to the CAFE standard of passenger automobiles.
Extension of maximum fuel economy increase	Manufacturers earn a "CAFE credit" for producing dual-fueled vehicles. The maximum increase in a manufacturer's CAFE owing to	*Sec. 804.* Maximum increase in a manufacturer's CAFE owing to inclusion of dual-fueled vehicles in its fleet is limited to 1.2 mpg for model	*Sec. 203.* An existing incentive that provides	The fuel economy study by the National Academy of Sciences (NAS) recommended

Provision	Current Law	Senate	House	Comments
for alternative vehicles	inclusion of dual-fueled vehicles in its fleet is limited to 1.2 mpg for model years 1993-2004, and 0.9 mpg for model years 2005-2008.	years 1993-2008, and 0.9 mpg for model years 2009-2013.	CAFE credits to manufacturers of dual-fueled vehicles is extended through model year 2008.	elimination of the credit, contending that these vehicles are rarely operated on anything but conventional gasoline, while the credit permits the manufacturer to sell less-efficient vehicles.
Study of feasibility and effects of reducing use of fuel for automobiles	Not in current law.	No comparable provision.	*Sec. 207.* The National Academy of Science is to undertake a study on the feasibility and effects of reducing automobile fuel use – "by a significant percentage" – by model year 2010. The study is to particularly look at the promise of fuel cell technology and alternatives to the present structure of the CAFE standards.	
Procurement of alternative fueled and hybrid light-duty trucks for federal fleets	Sec. 303 of the Energy Policy Act of 1992 (P.L. 102-486) required that, by FY1999, 75% of vehicle purchases for a federal fleet of 20 or more light-duty motor vehicles be alternative-fueled vehicles. Exceptions were made for emergency, military and law enforcement vehicles, among other uses.	*Sec. 805.* Five percent of light duty trucks procured for federal fleets in FY2005-FY2006 must be alternative-fueled or hybrid vehicles. This requirement increases to 10% after FY2006.	*Sec. 205.* In addition to the 75% of federal motor vehicles purchased each year that must be alternative-fueled under Sec. 303(b)(1) of P.L. 102-486, 5% of federal fleet vehicles purchased during FY2004-FY2005, and 10% in FY2006 and thereafter, must be alternative-fuel or hybrid vehicles.	The targets specified in existing law have not been met.
Use of alternative fuels	Energy Policy Act of 1992 [42 U.S.C. 13220]. Of the vehicles purchased by federal and state agencies, and alternative fuel providers in a given year, a percentage must be alternative fuel vehicles.	*Sec. 806.* Dual-fueled vehicle fleets in executive branch agencies must use alternative fuels 100% of the time by Jan. 1, 2009, but the Secretary of Transportation is authorized to waive the requirement to 50% of the time by Jan. 1, 2009, and 75% by Jan. 1, 2011. No waivers may be extended beyond the end of 2012. Additional waiver authority is provided if the alternative fuel "is not reasonably available" in a particular geographic area.	*Sec. 206.* Federal fleets must reduce the purchase of "petroleum-based nonalternative fuels" during FY2004-FY2008 by some percentage from a baseline, as designated by the Secretary of Energy.	Under current law, there is no specific requirement to use alternative fuels in these vehicles.
Hybrid electric and fuel cell vehicles		*Sec. 807.* Appropriations of $225 million to DOE are authorized for FY2003 to expand R&D for advanced technologies to improve the cleanliness	No comparable provision.	

Provision	Current Law	Senate	House	Comments
		of automobiles. Emphasis is placed on (1) fuel cells, including high temperature membranes for fuel cells and fuel cell auxiliary power systems; (2) hydrogen storage; (3) advanced vehicle engine and emission control systems; (4) advanced batteries and power electronics for hybrid vehicles; (5) advanced fuels; and (6) advanced materials.		
Diesel fueled vehicles	No current law.	*Sec. 808*. DOE is required to accelerate R&D for diesel combustion and after treatment technologies with the objective of enabling diesel technology to meet Tier 2 emission standards not later than 2010. [These standards will apply to cars and light trucks after the 2003 model year.]	No comparable provision.	
Fuel cell demonstration	No current law.	*Sec. 809*. The Secretaries of Energy and Defense are to jointly carry out a program to accelerate use of fuel cell technology in military and non-military uses. Technologies developed in the Partnership for a New Generation of Vehicles and Freedom Car programs are specifically targeted.	No comparable provision.	
Bus replacement	No current law.	*Sec. 810*. The Secretary of Transportation is required to carry out a study to determine how best to replace diesel-fueled buses with buses that are hybrids, or buses that use fuel cells or cleaner burning alternative and renewable fuels.	No comparable provision.	
Average fuel economy standard for pickup trucks	No specific provision.	*Sec. 811*. The CAFE standard for "pickup trucks" is frozen at 20.7 mpg, the current standard for light-duty trucks.	No comparable provision.	The House legislation requires savings in the fuel consumption of light-duty trucks, which embraces light trucks, SUVs and passenger vans. The Senate language would appear to require some definition of a third category of vehicle – "pickup trucks" – in addition

Provision	Current Law	Senate	House	Comments
				to passenger cars and light-duty trucks. Depending upon how pickups are defined, the Senate provision might not exclude SUVs and vans from future rulemakings to set a higher CAFE standard.
Annual report on U.S. energy independence.	No current law.	No comparable provision.	*Sec. 802.* National energy plans required by the Department of Energy Organization Act (P.L. 95-91) must include a section evaluating progress the United States has made toward a goal of not exceeding 50% dependence on foreign oil sources by 2010. The plan shall also address what legislative or administrative actions are needed to meet this goal.	The House language does not specify whether this is dependence measured as gross imports or net imports. In calendar year 2001, total imports, expressed as a percentage of petroleum products supplied, was 59.3%; as an expression of net imports, it was 54.3%. No comparable provision was included in the Senate bill, but it was amended on the floor to establish a consumer energy commission that will undertake a one-time study on price spikes and how they might be averted in the future.
Exception to HOV passenger requirements for alternative fuel vehicles	States may permit exemptions from high occupancy (HOV) restrictions for inherently low emission vehicles [23 U.S.C. 102(a)(2)].	*Sec. 812.* States are permitted to exempt one-passenger alternative fuel vehicles from HOV restrictions.	*Sec. 151.* States are permitted to grant exceptions to HOV restrictions for alternative fuel and hybrid vehicles.	While not codified in federal law, HOV exemptions for such vehicles are already provided by some states because of their low emissions.
Grants for alternative fuel vehicles	The Transportation Equity Act for the 21st Century (TEA-21) [23 U.S.C. 149] provides grant funding for the purchase of alternative fuel vehicles and infrastructure, but does not provide funding for advanced diesel vehicles.	No provision.	*Sec. 2101-2105.* A pilot program is established within the Department of Energy to provide grants to state and local governments, and metropolitan transit authorities, to aid in the purchase of alternative fuel and advanced diesel vehicles, and the infrastructure necessary to support them.	
Alternative fuel data collection	No provision.	*Sec. 813.* The Administrator of the Energy Information Administration (EIA) is required to conduct a survey on alternative fuels and publish monthly data on quantities of fuel produced, imported, and consumed, as well as	No provision.	Currently, EIA publishes annual data on fuel consumption and vehicle purchases.

Provision	Current Law	Senate	House	Comments
		production costs, marketing costs, and market prices.		
Green school buses	The Transportation Equity Act for the 21st Century (TEA-21) [49 U.S.C. 5309(m)(1)(C)] provides grant funding for research and demonstration of fuel cell buses, mainly for transit purposes.	*Secs. 814-816.* A pilot program is established by the Departments of Energy and Transportation to provide grants to local governments and contractors that provide school bus service for public school systems to aid in the purchase of alternative fuel and advanced diesel buses, and the infrastructure necessary to support them. In addition, Section 815 establishes a pilot program for the development and demonstration of fuel cell school buses.	*Sec. 2141-2144.* Similar to the Senate version, except that the program would be administered solely by the Department of Energy. Further, the House version has potentially more stringent requirements for emissions from eligible vehicles.	
Biodiesel fuel use credit	Energy Policy Act of 1992 [42 U.S.C. 13220]. Of the vehicles purchased by a federal, state, and fuel provider fleet in a given year, a percentage must be alternative fuel vehicles. Any excess vehicle purchases may be credited toward future years. Fleet operators may meet up to 50% of the requirement in a given year by purchasing biodiesel fuel, but the use of biodiesel fuel does not generate credits.	*Sec. 817.* Fleet operators may claim alternative fuel vehicle credits for excess purchase of biodiesel fuel. Further, fleet operators may use biodiesel fuel to meet up to 100% of required purchases in a given year.	*Sec. 153.* Credits for the purchase of biodiesel fuel may be counted toward future vehicle purchase requirements.	
Neighborhood electric vehicles	The Energy Policy Act of 1992 [42 U.S.C. 13211] defines the term "alternative fuel vehicle."	*Sec. 818.* Neighborhood electric vehicles may be treated as alternative fuel vehicles for compliance and tax purposes.	No provision.	Neighborhood electric vehicles (NEVs) are small electric vehicles that are certified for low speeds.
Secondary electric vehicle battery research and development	No provision.	No provision.	*Sec. 2131-2133.* A program is established for research and development on applications for used electric vehicle batteries in utility and commercial power storage.	Sec. 625 of the Energy Policy Act required a DOE study of utility applications for used electric vehicle batteries.
Credit for hybrid vehicles, dedicated alternative fuel	Energy Policy Act of 1992 [42 U.S.C. 13258]. Of the vehicles purchased by a federal, state, and fuel provider	*Sec. 819.* Fleet operators may generate alternative fuel vehicle (AFV) credits through the use of hybrid vehicles. In	No provision.	Currently, hybrid vehicles are not considered alternative fuel vehicles because their primary fuel is gasoline.

Provision	Current Law	Senate	House	Comments
vehicles and infrastructure	fleet in a given year, a percentage must be alternative fuel vehicles.	addition, fleet operators may generate credits by helping expand AFV use in non-covered fleets, and through investment in AFV infrastructure.		Credits may be used to help meet future alternative vehicle purchase requirements.
Renewable content of motor fuel	No provision.	*Sec. 820.* Beginning in 2004, motor gasoline must contain a certain amount of renewable fuel. In 2004, 2.3 billion gallons of renewable fuel must be sold annually, increasing incrementally each year to 5 billion gallons in 2012. After 2012, the percentage of renewable fuel in the motor fuel pool must be constant. Ethanol from cellulosic biomass is granted extra credits toward fulfilling the program's requirements. Further, renewable fuel providers are exempt from defective product liability if they are in compliance with the Clean Air Act.	*Sec. 604.* The EPA Administrator and the Secretary of Energy are required to conduct a study on the feasibility of requiring a minimum quantity of renewable fuel in motor fuel.	The two most common renewable fuels are ethanol and biodiesel. Currently, about 1.8 billion gallons of ethanol and 0.1 billion gallons of biodiesel are consumed annually in the United States.
Federal agency ethanol-blended gasoline and biodiesel purchasing requirement	No provision.	*Sec. 820A.* Federal agencies must purchase ethanol-blended gasoline and biodiesel for diesel blending in areas where the fuels are generally available at a competitive price. Certain vehicles, such as non-road, combat, emergency, and law enforcement vehicles are exempt.	No provision.	In some places, mainly in the Midwest, ethanol-blended gasoline comprises the majority of retail gasoline.
Loan guarantees for commercial byproducts (including ethanol) of municipal solid waste	No provision.	*Sec. 820B.* The Secretary of Energy is required to establish a program to provide loan guarantees for the construction of facilities that process and convert municipal solid waste into fuel ethanol and other commercial products.	*Sec. 603* The Secretary of Energy is required to conduct a study on the feasibility of providing loan guarantees for such facilities.	

Additional Fuel Efficiency Measures

Provision	Current Law	Senate	House	Comments
Fuel efficiency of the federal fleet of automobiles	Executive Order 13149, issued by President Clinton on April 21, 2000, directed that federal agencies increase the EPA-rated fuel economy of their new passenger cars by at least 1 mile per gallon (mpg) by the end of FY2002 and at least 3 mpg by FY2005 from a baseline of FY1999 acquisitions.	*Sec. 821.* Executive agencies are required to increase the average fuel economy of their new vehicle purchases by 1 mile per gallon (mpg) in FY2002 and 3 mpg in FY2005, from a FY1999 baseline. This applies to passenger automobiles and light-duty trucks, but excludes vehicles used in combat-related missions, law enforcement, and emergency rescue work.	*Sec. 204.* Similar to Senate provision.	These provisions largely codify the existing executive order.
Idling reduction systems in heavy duty vehicles and advanced idle elimination systems	No provision.	*Sec. 822.* The Department of Energy is required to study potential fuel savings from reducing long duration idling of heavy-duty engines. After completion of the study, the Secretary may require the installation of on-board idling reduction systems on new heavy-duty vehicles.	*Sec. 162.* The Environmental Protection Agency is required to determine whether existing air emissions models accurately reflect the emissions from idling heavy-duty vehicles. Further, the Agency is required to determine whether emission reduction credits should be allotted for the installation of idle elimination systems at truck stops and other locations.	The House and Senate versions focus on substantially different factors. The Senate version focuses solely on on-board technologies to reduce fuel consumption. The House version focuses on stationary systems to reduce pollutant emissions.
Conserve by bicycling program	No provision.	*Sec. 823.* The Secretary of Transportation is required to establish a pilot program to encourage the use of bicycles in place of motor vehicles.	No provision.	
Fuel cell vehicle program	Various programs currently exist to promote the research, development, and demonstration of fuel cells and fuel cell vehicles.	*Sec. 824.* The Secretary of Energy is required to develop a program to enable the availability of 100,000 hydrogen fuel cell vehicles by 2010, and 2.5 million vehicles by 2020. Further, the program should include timetables for the development of hydrogen fuel infrastructure to support those vehicles.	No provision.	

Federal Reformulated Fuels

Provision	Current Law	Senate	House	Comments
Short title	Not applicable.	*Sec. 831.* "Federal Reformulated Fuels Act of 2002."	No similar provision.	
Leaking underground storage tanks and funding for MTBE contamination	The Solid Waste Disposal Act [42 U.S.C. 6991] provides for the regulation of underground storage tanks, including gasoline storage tanks. Among other provisions, the act allows regulations for the detection, prevention, and correction of releases of regulated substances.	*Sec. 832.* Funds are authorized from the Leaking Underground Storage Tank (LUST) Trust Fund for the prevention and mitigation of contamination by ether fuel additives including methyl tertiary butyl ether (MTBE). The following funds are authorized for FY2003 through FY2008: $200 million for general MTBE mitigation, $200 million for release prevention; $2 million for research on bedrock remediation; $350,000 for research on soil remediation.	*Sec. 504.* $200 million is authorized from the LUST Trust Fund for the mitigation and prevention of MTBE contamination.	MTBE, a common additive in gasoline, has been found to contaminate underground drinking water sources in several states.
Authority for water quality protection from fuels	The Clean Air Act does not give the Environmental Protection Agency (EPA) the authority to regulate fuels to prevent water contamination.	*Sec. 833.* The EPA Administrator may control or prohibit the sale of fuel or fuel additives that may harm water quality. Four years after the date of enactment, the use of MTBE in gasoline is banned. Individual states may authorize the use of MTBE after notifying EPA. Funding is authorized for grants to MTBE merchant producers to convert to the production of other gasoline additives.	No provision.	At least 14 states have already passed laws to ban or limit the use of MTBE.
Elimination of oxygen content requirement for reformulated gasoline	The Clean Air Act Amendments of 1990 [42 U.S.C. 7545(k)] require the use of Reformulated Gasoline (RFG) in certain ozone nonattainment areas. RFG areas must meet more stringent standards for various pollutants than conventional gasoline areas. RFG is also required to contain a minimum level of oxygen. In addition, Southern RFG areas face more stringent standards than Northern areas.	*Sec. 834.* The Clean Air Act is amended to eliminate the minimum oxygen requirement. Further, EPA must promulgate regulations to maintain current toxic air pollutant reductions. In addition, standards for Northern and Southern RFG areas are consolidated so that all areas are held to the more stringent southern standard	No provision.	
Public health and environmental impacts of fuels and fuel additives	Under the Clean Air Act Amendments of 1990 [42 U.S.C. 7545(b)], the EPA Administrator may require manufacturers to conduct tests on the health effects of fuels and fuel additives.	*Sec. 835.* The EPA Administrator must study the health and environmental effects of fuels and fuel additives. Manufacturers are also required to conduct tests on health and environmental effects.	No provision.	

Provision	Current Law	Senate	House	Comments
Analyses of motor vehicle fuel changes	No provision.	*Sec. 836.* The EPA Administrator must publish an analysis of the changes in emissions and air quality resulting from the implementation of Subtitle C.	No provision.	
Additional opt-in areas under reformulated gasoline program	Under the Clean Air Act Amendments of 1990 [42 U.S.C. 7545(k)], areas in severe or extreme nonattainment of ozone standards are required to use RFG. Other nonattainment areas with less severe problems may opt-in to the RFG program.	*Sec. 837.* Areas in compliance with ozone standards (that are within the ozone transport region) may also opt-in to the federal RFG program, unless there is insufficient supply of RFG.	No provision.	The ozone transport region covers areas from the Washington, D.C. Metropolitan Statistical Area to Maine.
Modifications to reformulated gasoline requirements	Regulations promulgated under the RFG program set certain accounting, documentation, and compliance requirements concerning the draining of gasoline storage tanks and the distribution of RFG blending components [40 CFR 80.78 and 80.102].	No provision.	*Sec. 501-502.* EPA is required to determine whether these requirements should be modified. Specifically, EPA must study whether changes could improve the cost and availability of RFG. Any modifications to the RFG program must be implemented 60 days before the beginning of the high ozone season (summer).	
Federal enforcement of state fuels requirements	Under the Clean Air Act Amendments of 1990 [42 U.S.C. 7545(k)], states with less-severe ozone nonattainment areas (that do not opt-in to the RFG program) may set their own fuel standards as part of State Implementation Plan (SIP) for ozone.	*Sec. 838.* If a state requests, EPA may enforce fuel requirements set in a state's SIP.	No provision.	
Fuel system requirements harmonization study and boutique fuels	Fuel standards vary.	*Sec. 839.* The EPA Administrator and the Secretary of Energy are required to conduct a study of all federal, state, and local environmental requirements for motor fuels. They are required to analyze the effects of the various standards on consumer prices, fuel availability, domestic suppliers, air quality and vehicle emissions. Further, they are required to study the feasibility of developing national or regional fuel standards. A report must be published by June, 2006.	*Sec. 503.* Substantially similar to the Senate provision. However, the House version would require publication of a report by the end of this year.	Because of various federal and state standards, as well as local refining and marketing decisions, refiners may face several different fuel standards in a state. These various fuel formulations have the potential to contribute to supply disruptions and price instability.
Review of federal procurement	Executive Order 13149, issued by President Clinton on April 21, 2000,	*Sec. 840.* The Administrator of the General Services Administration must submit a report	No provision.	Most federal AFVs are dual-fuel vehicles (capable of being

Provision	Current Law	Senate	House	Comments
initiatives relating to use of recycled products and fleet and transportation efficiency	directed that federal agencies increase the EPA-rated fuel economy of passenger cars and to fuel alternative fuel vehicles (AFV) with alternative fuels a majority of the time. Executive Order 13101, issued by President Clinton on September 14, 1998, directed federal agencies to increase their use of recycled products.	to Congress on efforts by federal agencies to purchase recycled products, purchase AFVs and fuels, and improve federal vehicle fleet efficiency.		fueled by either an alternative or conventional fuel), and most of these are fueled with gasoline as opposed to alternative fuels.
Mobile to stationary source trading	No provision.	No provision.	*Sec. 154*. The Environmental Protection Agency (EPA) is required to study whether allowing mobile and stationary sources to trade emissions credits under the Clean Air Act would provide additional flexibility in achieving and maintaining air quality standards.	

Energy Efficiency and Assistance to Low Income Consumers

Low Income Assistance and State Energy Programs

Provision	Current Law	Senate	House	Comments
Energy conservation programs reauthorization	Funding authorizations have expired.	No provision.	*Sec. 101*. Funding is authorized for DOE Energy Efficiency R&D programs under the Interior Appropriations bill through FY2006.	
LIHEAP, weatherization, and state energy funding	Department of Health and Human Services funding for the Low-Income Home Energy Assistance Program (LIHEAP) is currently authorized through FY2003 in the Human Services Authorization Act of 1998. DOE Weatherization Program funding is authorized through FY2003 under 42 U.S.C. 6872. The DOE State Energy Program funding is authorized through FY2003 under 42 U.S.C. 6322.	*Sec. 901*. Increased funding is authorized for LIHEAP and Weatherization grant programs for FY2003 through FY2005.	Funding authorizations for LIHEAP *(Sec. 134)* and Weatherization (*Sec. 133)* grant programs are set for FY2003 through FY2005.	The bills are nearly identical. The House bill also requires a GAO study of LIHEAP.

Provision	Current Law	Senate	House	Comments
State energy programs	Authorization expired.	*Sec. 902.* Increased funding is authorized for FY2003 through FY2005 for the DOE State Energy grant programs. Also, new requirements are set for state energy conservation goals and plans.	*Sec. 131.* The House provisions are nearly identical to those in the Senate bill.	
Energy efficient schools	Sec. 397 of the Energy Policy and Conservation Act (EPCA, P.L. 94-163) authorizes funding for the DOE schools and hospitals program through FY2003.	*Sec. 903.* DOE is directed to create a High Performance Schools Program, a grant program for using energy-efficient measures in the renovation and construction of schools.	*Sec. 132.* The funding authorization for the DOE schools and hospitals program is extended through 2010. *Sec. 135* creates a High Performance Public Buildings Program, a grant program for energy-efficient renovation and construction of local government buildings.	The House provision in *Sec. 135* appears similar to, but broader than, the Senate provision.
Low income community energy efficiency pilot program	No existing program.	*Sec. 904.* A pilot energy-efficiency program is created for community development corporations and Native American economic development entities.	No provision.	
Energy efficient appliance rebate programs	No existing program.	*Sec. 905.* DOE is required to fund rebate programs in eligible states to support residential end-user purchases of Energy Star products.	The House bill does not have a rebate provision, but *Sec.3107* provides a tax credit to producers for certain energy efficient residential appliances.	

Federal Energy Efficiency

Provision	Current Law	Senate	House	Comments
Energy management requirements	Section 202 of Executive Order 13123 employs 1985 as the baseline for measuring federal building energy efficiency improvements and calls for a 35% reduction in energy use per gross square foot by 2010.	*Sec. 911.* The baseline is updated from 1985 to 2000 and a new goal of 20% reduction is set for 2011. At that time, DOE is directed to assess progress and set a new goal for 2021.	*Sec. 121b.* The 1985 baseline is kept and a goal of 45% reduction is set for 2020.	The two bills are fairly close in the goal set for 2011.
Energy use measurement and accountability	No existing requirement.	*Sec. 912.* Federal buildings are required to be metered or sub-metered by late 2004, to help	*Sec. 121f and 126.* The provision is nearly identical to that in the Senate bill.	

Provision	Current Law	Senate	House	Comments
		reduce energy costs and promote energy savings.		
Advanced building efficiency testbed	New program.	No provision.	*Sec. 125.* DOE is required to create a program to develop, test, and demonstrate advanced federal and private building efficiency technologies.	
Federal building performance standards	Mandatory energy efficiency performance standards for federal buildings are set in Section 305(a) of P.L. 94-385 (ECPA) and implemented through 10 CFR Part 435.	*Sec. 913.* DOE is directed to set revised energy efficiency standards for new federal buildings.	No provision.	
Procurement of energy efficient products	Section 403 of Executive Order 13123 directs federal agencies to purchase life-cycle cost-effective Energy Star products.	*Sec. 914.* Statutory authority is created that requires federal agencies to purchase Energy Star or energy efficient products designated by the Federal Energy Management Program (FEMP).	*Sec. 121e.* A similar requirement is set in the House bill. Also, *Sec.124* requires federal agencies to acquire efficient (SEER 12) air conditioners and heat pumps.	
Repeal of energy savings performance contract (ESPC) sunset	Section 801(c) of the National Energy Conservation Policy Act (NECPA, P.L. 95-619) provides for federal use of energy savings performance contracts through the end of FY2002.	*Sec. 915.* Federal agencies are empowered to continue using energy savings performance contracts indefinitely.	*Sec. 122.* A similar extension is set out in the House bill.	
Energy savings performance contract definitions	Section 804(2) of NECPA provides definitions for ESPCs.	*Sec. 916.* The definition of energy savings is expanded to include a reduction in water costs.	*Sec. 122.* Similar definitions are set out in the House bill.	
Review of energy savings performance contract program	No existing requirement.	*Sec. 917.* DOE is required to report to Congress on barriers to the ESPC program and ways to improve its effectiveness.	*Sec. 127.* The same provision is set out in the House bill.	
Utility incentive programs	Section 546(c) of NAECA authorizes and encourages federal agencies to participate in utility incentive programs to increase energy efficiency and water conservation.	No provision.	*Sec. 123.* The current law is amended to allow agencies to form contracts for energy efficiency services under utility programs.	
Federal energy bank	No existing requirement.	*Sec. 918.* A fund is established in the U.S. Treasury that can be used for loans to federal agencies for energy and/or water efficiency.	No related provision.	
Energy and water saving measures in congressional buildings	Section 310 of the Legislative Branch Appropriations Act of 1999 called for the Architect of the Capitol (AOC) to develop	*Sec. 919.* The Architect of the Capitol is required to plan and implement an energy and water conservation strategy for congressional buildings that is consistent with that required	*Sec. 128.* Funding is authorized to support a requirement that the AOC study the potential for renewable energy and other sources to make the	

Provision	Current Law	Senate	House	Comments
	an energy efficiency plan for congressional buildings.	of other federal buildings. No funding authorization specified.	Capitol complex more secure from power shortages.	
Increased use of recovered material in federally funded projects involving procurement of cement or concrete	No provision.	*Sec. 920.* Requires federally funded projects to increase the procurement of cement and concrete that uses recovered material.	No related provision.	

Industrial Efficiency and Consumer Products

Provision	Current Law	Senate	House	Comments
Voluntary commitments to reduce industrial energy intensity	While there is no current statutory authority, programs have been in place, such as the former Climate Wise program at EPA.	*Sec. 921.* DOE is authorized to form voluntary agreements with industry sectors or companies to reduce energy use per unit of production by 2.5% per year.	No provision.	
Authority to set standards for commercial products	Current law has standards for residential appliances, but not for commercial equipment.	*Sec. 922.* DOE is authorized to set energy efficiency standards for commercial appliances and products.	No provision.	
Additional definitions	Energy terms are defined in various statutes.	*Sec. 923.* Terms are defined for provisions in the following sections.	*Sec. 124d.* Definitions for several energy efficiency terms are updated.	
Additional test procedures	No existing requirement.	*Sec. 924.* Test procedures are prescribed for exit signs, traffic signals, and transformers, and DOE is directed to set procedures for ceiling fans, vending machines, and commercial refrigerators.	*Sec. 143.* DOE is directed to set test procedures, standards, and labels for residential furnace fans, residential central air conditioner fans, heat pump circulation fans, suspended ceiling fans, and refrigerated bottled or canned beverage vending machines.	
Energy labeling	Section 324(a) of the Energy Policy and Conservation Act (P.L. 94-163) directed the Federal Trade Commission (FTC) to issue a rule for energy efficiency labels on consumer products (42 U.S.C. 6294).	*Sec. 925.* FTC is required to issue a rule that addresses changes to improve the effectiveness of energy labels. Also, DOE is directed to prescribe labeling requirements for products added by this title of the bill.	*Sec. 142.* DOE is required to recommend labeling for non-covered products to FTC. FTC is required to issue a rule on the feasibility of labeling non-covered products and the effectiveness of the current labeling program.	

Provision	Current Law	Senate	House	Comments
Energy Star Program	No existing statutory authority.	*Sec. 926.* DOE and EPA are given statutory authority for the Energy Star program.	*Sec. 141.* The statutory authority is the same, except that DOE and EPA are also directed to determine whether certain products and buildings should be included under the authority.	
Energy conservation standards for central air conditioners and heat pumps	Section 546(c) of NECPA, as implemented by 10 CFR, sets a seasonal energy efficiency ratio (SEER) standard of 10 for central air conditioners and heat pumps.	*Sec. 927.* DOE is directed to amend the standard within 60 days after enactment.	No provision.	A DOE rulemaking late in the Clinton Administration set the standard to a SEER of 13. Early in the Bush Administration a new DOE rulemaking rescinded the previous one and proposed a SEER of 12.
Energy conservation standards for additional consumer and commercial products and standby mode	No existing requirement for additional products and standby mode.	*Sec. 928.* DOE is directed to issue a rule that determines whether an energy efficiency standard needs to be set for the standby operating mode of certain appliances.	*Sec. 143.* DOE is required to set energy efficiency standards for the standby mode of households appliances, excluding certain digital devices and certain other equipment subject to other standards.	
Consumer education on energy efficiency benefits of air conditioning, heating, and ventilation maintenance	No provision.	*Sec. 929.* A public education program is authorized that would address the energy-saving benefits of improved maintenance for certain equipment. Also, the Small Business Administration is directed to assist small businesses in becoming more energy efficient.	*Sec. 143c.* DOE is required to implement a public education program about the energy saving benefits of improved maintenance of equipment.	
Study of energy efficiency standards	No provision.	*Sec. 930.* DOE is directed to have NAS study how the effectiveness of standards may be influenced by measures that focus either on energy end-use or on the full fuel cycle.	No provision.	

Housing Efficiency

Provision	Current Law	Senate	House	Comments
Capacity building for energy efficient, affordable housing	No provisions for energy efficient housing in HUD Demonstration Act (42 U.S.C. 9816).	*Sec. 931.* Activities are required that provide energy efficient affordable housing and other residential measures under the HUD Demonstration Act.	*Sec. 4101.* The House bill provision is the same as that in the Senate bill.	
Increase of CDBG public services cap for energy conservation and efficiency activities	Section 105(a)(8) of the Housing and Community Development Act of 1974 allows a percentage of community development block grant (CDBG) public service funding to be used for energy efficiency.	*Sec. 932.* The amount of assistance for providing public services involving energy efficiency is increased by 10%.	*Sec. 4102.* The House bill provision is the same as that in the Senate bill.	
Federal Housing Administration mortgage insurance incentives for energy efficient housing	Section 203(b)(2) of the National Housing Act allows solar energy equipment to increase the amount of property value that can be covered by mortgage insurance by up to 20%.	*Sec. 933.* The amount of property value that can be covered by mortgage insurance due to solar energy equipment. is increased from 20% to 30%.	*Sec. 4103.* The House bill provision is the same as that in the Senate bill.	
Public housing capital fund	No provision for energy and water efficiency improvements (42 U.S.C. 1437).	*Sec. 934.* The Public Housing Capital Fund is modified to include certain energy and water use efficiency improvements.	*Sec. 4104.* The House bill provision is the same as that in the Senate bill.	
Grants for energy-conserving improvements for assisted housing	No provision for energy and water efficiency improvements (42 U.S.C. 8231).	*Sec. 935.* HUD is directed to provide grants for certain energy and water efficiency improvements to multifamily housing projects.	*Sec. 4105.* The House bill provision is the same as that in the Senate bill.	
North American Development Bank	No existing requirement.	*Sec. 936.* The North American Development Bank is encouraged to finance energy efficiency projects.	*Sec. 4106.* The House bill provision is the same as that in the Senate bill.	
Capital fund	No existing provision for proposed energy projects (42 U.S.C. 1437).	*Sec. 937.* Activities of the Housing Act Capital Fund are expanded to include broader authorization for energy efficiency projects.	No provision.	
Energy-efficient appliances	No existing requirement.	*Sec. 938.* Public housing agencies are required to purchase cost-effective Energy Star appliances.	No provision.	
Energy-efficient standards	The federal government encourages states to use energy efficiency standards for public and assisted housing, and Model Efficiency codes, that are set by the Council of American Building Officials (CABO) (42 U.S.C. 12709).	*Sec. 939.* The energy efficiency standards and codes are changed from CABO to the 2000 International Energy Conservation Code.	No provision.	

Provision	Current Law	Senate	House	Comments
Energy strategy for the Department of Housing and Urban Development (HUD)	No existing requirement.	*Sec. 940.* HUD is required to implement an energy efficiency strategy to reduce utility expenses in public and assisted housing. Also, HUD is directed to create an Office of Energy Management to implement the strategy and report on it to Congress.	No provision.	

Rural and Remote Communities

Provision	Current Law	Senate	House	Comments
Rural and Remote Community Fairness Act	No current law.	*Secs. 941-950.* In general, the purpose of this title is to develop and maintain "viable rural and remote communities through the provision of ... reasonably priced and environmentally sound energy, ... telecommunications and utility services to those communities that do not have these services or who currently bear costs ... significantly above the national average." [Sec. 942] Among other programs, the "Rural and Remote Community Fairness Act" authorizes and appropriates $20 million for 7 fiscal years to provide grants to rural and remote communities for purposes of "increasing energy efficiency, siting or upgrading transmission and distribution lines, or providing or modernizing electric facilities." [Sec. 948]	No comparable provision.	

National Climate Change Policy

Sense of Congress

Provision	Current Law	Senate	House	Comments
Sense of Congress on global warming	No provision.	*Sec. 1001.* Growing evidence is found that increases in greenhouse gas concentrations are contributing to global climate change, and it is the Sense of the Congress that the United States should demonstrate international leadership and responsibility in mitigating the health, environmental, and economic threats posed by global warming. and assess the Federal Government's implementation of it.	No provision.	

Climate Change Strategy

Provision	Current Law	Senate	House	Comments
Definitions	No provision.	*Sec. 1012.* Critical terms used in the title are defined, including "climate-friendly technology" and "stabilization of greenhouse gas concentrations."	No provisions.	No specific targets or time frames for greenhouse gas reduction are mentioned.
National climate change strategy	Sec. 1602(a) of the 1992 Energy Policy Act states that "The ... National Energy Policy Plan ... shall include a ... strategy ... designed to achieve ... the stabilization and eventual reduction in the generation of greenhouse gases...." Article 4, 2(b) of the ratified. United Nations Framework Convention on Climate Change (UNFCCC) states: "Parties [developed countries] shall communicate ... information on its policies and measures ... with the aim of returning individually or jointly to their 1990 levels ... anthropogenic emissions of carbon dioxide and other greenhouse gases."	*Sec. 1013.* The President, through a new Office of National Climate Change Policy (ONCCP) in the Executive Office of the President (EOP), is to develop a National Climate Change Strategy (NCCS) based on parameters identified in the Title. The ONCCP is directed to develop the NCCS with the long-term goal of stabilization of greenhouse gas concentrations. The NCCS is to encompass four key elements – (1) emissions mitigation measures; (2) technology innovation; (3) climate adaptation research; and (4) expanded efforts to resolve remaining scientific and economic uncertainty. The ONCCP is to develop the NCCS consistent with various national goals and with meaningful public and interest group participation. The NCCS is to be updated every four years, and progress reports are to be sent by the President to Congress annually. It is to be reviewed by the National Academy of Sciences.	No provision.	This title sets up new institutions and institutional arrangements to study global climate change, its implications, and possible responses. It does not state that its goal is compliance with the UNFCCC commitment the U.S. made under article 4, 2(b) when it ratified the UNFCCC in 1992.
Office of National Climate Change Policy	New program office.	*Sec. 1014.* The ONCCP is established within the EOP. ONCCP is to focus on achieving the long-term goal of stabilizing greenhouse gas concentrations while minimizing adverse short-term and long-term economic and social effects. Duties including establishing priorities for the CCRS; establishing the Interagency Task Force; ensuring the objective nature of the CCRS; and advising the President on federal implementation of climate change activities. Among the duties of the Director are to advise the President on the multiple impacts of government	No provision.	New office established within the Executive Office of the President to coordinate climate change policy.

Provision	Current Law	Senate	House	Comments
		programs, tax, trade, and foreign policies on achieving the CCRS, and to prepare an annual report for the President to submit to the Congress under Sec. 1013. The Interagency Task Force shall serve as the primary forum through which federal agencies assist the ONCCP in developing and updating the CCRS, and assist the Director of the ONCCP in preparing its annual report to Congress.		
Office of Climate Change Technology **EPA/OAR authorization of appropriations**	New program office and/or funding.	*Sec. 1015.* The Office of Climate Change Technology (OCCT) is established within DOE. Responsibilities include managing an energy technology R&D program that focuses on high-risk, breakthrough technologies that promise to mitigate and/or sequester emissions of greenhouse gases. In addition, OCCT is to support development of the NCCS and the activities of the Interagency Task Force through provision of staff, data, and analytical tools. The OCCT is to maintain core analytical capabilities and other expertise in support of the NCCS. It is required to submit to Congress and the ONCCP an annual report on its progress in meeting the goal of the energy technology research and development program. In addition, the OCCT is to design and manage an international carbon dioxide sequestration monitoring and data collection program. The object is to determine the appropriateness of various sequestration mechanisms.	*Sec. 2171-2178.* The Climate Change Protection Programs in EPA's Office of Air and Radiation receive a 3-year authorization totaling $380.4 million to fund research and development, and demonstration and commercialization projects on a cost-shared basis with non-federal entities. Non-federal sources would be responsible for 20% of the costs for a research and development project and 50% of the cost for a demonstration and commercial application. Funding is restricted to technologies or processes that can be reasonably expected to yield new, measurable benefits to the cost, efficiency, or performance of the technology or process.	Both bills authorize cost-sharing programs with the private sector, but with different lead agencies, and restrictions on what can be funded.
Additional offices and activities	No specific provisions.	*Sec. 1016.* Other federal agencies may establish appropriate offices as necessary to carry out the provisions of this Act.	No provision.	

Science and Technology Policy

Provision	Current Law	Senate	House	Comments
Global climate change in the Office of Science and Technology Policy	New priority goal.	*Sec. 1021.* Section 101(b) of the National Science and Technology Policy, Organization, and Priorities Act of 1976 is amended to include under the Office of Science and Technology Policy (OSTP) the priority goal of "improving efforts to understand, assess, predict, mitigate and respond to global climate change."	No provision.	
Director of Office of Science and Technology Policy functions	New responsibility.	*Sec. 1022.* OSTP is to advise the Director of ONCCP on science and technology matters as they relate to climate change.	No provision.	

Miscellaneous Provisions

Provision	Current Law	Senate	House	Comments
Additional information for regulatory review	New requirement.	*Sec. 1031.* Agencies are required to include in any Statement of Energy Effects pursuant to Executive Order 13211 an estimate of the net change in greenhouse gas emissions resulting from the proposed federal action, and which policies or measures will be undertaken to mitigate or offset the increased emissions.	No provision.	
Greenhouse gas emissions from federal facilities	New requirement.	*Sec. 1032.* Four federal agencies are required to develop a methodology for estimating greenhouse gas emissions from all federally owned, leased, or operated facilities, including mobile sources. An emissions estimate is required within 18 months of enactment.	No provision.	

National Greenhouse Gas Database

Provision	Current Law	Senate	House	Comments
Purpose	A voluntary greenhouse reduction accounting system exists under *Sec. 1605(b)* of the 1992 Energy Policy Act. A mandatory greenhouse reporting system for powerplants is required under *Sec. 821* of the 1990 Clean Air Act Amendments.	*Sec. 1101.* Purpose is to establish a reliable and accurate greenhouse gas inventory, reductions registry, and information system.	No provision.	

Provision	Current Law	Senate	House	Comments
Definitions	New Program.	*Sec. 1102.* Terms for Title XI are defined. Six gases are explicitly included in the definition of greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Others may be added to the list.	No provision.	
Establishment of memorandum of agreement	New Program.	*Sec. 1103.* Specifies duties for the Department of Energy, Department of Commerce, Environmental Protection Agency, and Department of Agriculture with respect to the database. The Director of ONCCP shall facilitate a memorandum of agreement among the agencies to develop and operate the database.	No provision	
National Greenhouse Gas Database	New Program	*Sec. 1104.* The National Greenhouse Gas Database is established to collect, verify, and analyze information on greenhouse gas emissions and reductions by entities in the United States. The comprehensive system is to maximize completeness while minimizing costs to participants. Reductions recorded may be applied to any future control program.	No provision.	
Greenhouse gas reduction reporting	Voluntary greenhouse gas reductions are currently reported under Sec. 1605(b) of the 1992 Energy Policy Act.	*Sec. 1105.* All participating entities must establish a baseline on an entity-wide basis (except for sequestration projects), and report annually to the appropriate agency their direct and indirect greenhouse gas emissions beginning the April 1 of the third calendar year after enactment. Entities may choose to report verified reductions achieved before the above date.	No provision.	Reportable reductions include verifiable reductions reported under Sec. 1605(b) of EPACT.
Measurement and verification	New requirements.	*Sec. 1106.* The four designated agencies shall jointly develop comprehensive measurement and verification methods to ensure the registry is an accurate record of greenhouse gas emissions, reductions, sequestrations, and atmospheric concentrations.	No provision.	
Independent reviews	New requirements.	*Sec. 1107.* Database efficacy and operation shall be reviewed by the General Accounting Office every three years. The scientific underpinning of the database shall be reviewed by the National Academy of Sciences every four years.	No provision.	
Review of participation	New requirements.	*Sec. 1108.* Within five years of enactment, if participation in the registry involves less than 60% of aggregate greenhouse emissions, participation by all entities shall be mandatory.	No provision.	
Enforcement	New requirements.	*Sec. 1109.* Failure of any participating entity to report emissions under section 1108 is subject to civil action in federal court and civil penalties of up to $25,000 per day of non-compliance.	No provision.	
Report on statutory changes and harmonization	New requirements.	*Sec. 1110.* The President shall submit to Congress within three years of enactment a report describing any necessary changes in law necessary to improve the accuracy or operation of the database or the Title.	No provision.	
Authorization of appropriations	No provision.	*Sec. 1111.* There are authorized to be appropriated such sums as necessary to carry out this Title.	No provision.	

Energy Research and Development Programs

Provision	Current Law	Senate	House	Comments
Energy research and development programs	R&D programs are currently funded, but there are no existing goals for reducing energy intensity, curbing energy use, and cutting carbon dioxide emissions.	*Sec. 1201-1204.* A DOE energy R&D and deployment program is charged with the goals of reducing energy intensity by 1.9% annually through 2020, reducing total energy use by 8 quadrillion Btu by 2020, and reducing carbon dioxide by 166 million metric tons by 2020.	*Sec. 2001-2007.* DOE is urged to conduct an R&D and commercial application programs for energy efficiency, renewable energy, nuclear energy, fossil energy, and science. Also, *Sec. 2461* authorizes DOE RD&D funding of fuel cell technologies, with special focus on improving manufacturing production processes.	The Senate bill is broader than the House bill and it also sets goals for energy efficiency.

Energy Efficiency

Provision	Current Law	Senate	House	Comments
Enhanced energy efficiency research and development	Funding is in place for DOE energy efficiency programs, and many performance goals are set out in the FY2003 budget request.	*Sec. 1211.* Numerous goals are set for the DOE energy efficiency programs. Also, funding for the programs is authorized for FY2003 through FY2006.	*Sec. 2161.* Funding for the DOE energy efficiency programs is authorized for FY2003 through FY2004.	
National building performance initiative	No existing requirement.	No provision.	*Sec. 2181.* An interagency group is established to address energy efficiency R&D for buildings. The National Institute for Standards and Technology is directed to provide administrative support.	
Energy efficiency science initiative	Though there is no statutory authority, congressional initiatives have repeatedly funded this DOE program for several years. It is administered jointly by the Office of Energy Efficiency and Renewable Energy and the Office of Science.	*Sec. 1212.* Statutory authority is provided for the program and funding up to $50 million annually is authorized indefinitely. Also, DOE is directed to prepare an annual report on the program.	*Sec. 2161.* Funding appears to be authorized as part of a blanket authorization for DOE energy efficiency programs.	
Next generation lighting initiative	No existing requirement.	*Sec. 1213.* A DOE program is created that aims to develop, by 2011, advanced white light-emitting diodes for high energy efficiency in lighting.	*Sec. 2151-2155.* An R&D grant program is established at DOE for advanced lighting technologies focused on white light-emitting diodes.	

Provision	Current Law	Senate	House	Comments
Efficient railroad engine development and demonstration	No provision.	*Sec. 1214.* A public-private research partnership is established for the development and demonstration of locomotive engines that increase fuel economy, reduce emissions, improve safety, and lower costs. $130 million total is authorized to be appropriated for FY2003 and FY2004.	*Sec. 152.* Similar to the Senate provision, except that safety and cost are not criteria for the program. $90 million total is authorized to be appropriated between FY2002 and FY2004.	
High power density industry program	No specific provision.	*Sec. 1215.* DOE must create an RD&D program to improve energy efficiency and load management of data centers, server farms, and other high power density facilities.	*Sec. 2124.* Nearly identical to Senate provision.	
Precious metal catalysis	No specific provision.	*Sec. 1216.* The Secretary of Energy may conduct research in the use of precious metals other than platinum, palladium and rhodium for use in automotive catalytic converters.	No provision.	Platinum, palladium and rhodium are the three major precious metals currently used in the in automotive catalytic converters.

Renewable Energy

Provision	Current Law	Senate	House	Comments
Enhanced renewable energy research and development	No provision.	*Sec. 1221.* The Secretary of the Energy is required to conduct research, development, demonstration, and deployment projects on renewable energy, including wind, solar, biomass, and geothermal energy. Special projects include improving electricity delivery to rural and remote areas. A total of $2.51 billion is authorized for FY2003 through FY2006.	No comparable provision.	
Distributed power hybrid energy systems	No specific provision.	*Sec. 1221 (b)(9)(H).* DOE is directed to conduct R,D&D and deployment in partnership with industry to develop hybrid distributed energy systems that combine two or more distributed or on-site generation technologies. Further, Section 1221 (c)(2) calls for DOE demonstration projects that combine wind power and coal gasification technologies. Also, Sec. 1235 directs DOE to conduct R,D&D on distributed energy systems, including hybrids.	*Sec. 2121-2128.* DOE is required to develop a strategy and research program for combinations of two or more distributed power sources (microturbines, fuel cells, renewable energy equipment) that will jointly improve the overall reliability, efficiency, and environmental integrity these technologies. DOE is charged with creating a grant program to develop micro-cogeneration equipment, including applications for residential uses. DOE is directed to work with certain private sector standards organizations to	

Provision	Current Law	Senate	House	Comments
			develop voluntary consensus standard for distributed energy systems.	
Bioenergy programs	No provision.	*Sec. 1222.* The Secretary of Energy is required to conduct research, development, demonstration, and deployment projects on bioenergy, including biopower (electricity and process heat generation) and biofuels (liquid fuels, gaseous fuels, and industrial chemicals). For FY2003 through FY2006, a total of $295 million is authorized for biopower research, and $281 million for biofuels research.	*Secs. 2221-2225.* The Department of Energy is authorized to conduct research, development, demonstration, and commercialization projects on bioenergy. For FY2002 through FY2006, a total of $307 million is authorized for biopower research, and $361 million for biofuels research.	
Hydrogen research and development	The Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act [42 U.S.C. 12401 et. seq.] provides for research on hydrogen fuel.	*Sec. 1223.* The Act is amended to expand and extend authorization for hydrogen research. Research would expand to include the integration of fuel cells and hydrogen production systems. A total of $290 million is authorized for FY2003 through FY2006.	*Secs. 2201-2211.* The Act is amended to extend the authorization and promote the demonstration of hydrogen as a fuel for industrial, commercial, residential, transportation, and utility applications. For FY2002 through FY2006, $250 million is authorized for research and development projects, and $150 million for demonstration projects.	
Renewable and electric energy R&D authorization	General DOE authority.	Various renewable energy R&D sections include authorizations.	*Sec. 2261.* Funding is authorized for renewable energy program operation and maintenance. Funds may not be used for Departmental Energy Management or Renewable Indian Energy Resources. A new collaborative research program between DOE and other federal agencies on wave-powered electric generation is established. The Secretary of Energy is directed to assess the state of renewable energy resources in the United States and issue a report within a year of enactment.	

Fossil Energy

Provision	Current Law	Senate	House	Comments
Coal and related technologies	Coal research is mentioned in various statutes and appropriated through the Interior and Related Agencies bill.	*Sec. 1231.* DOE shall conduct a balanced fossil energy research, development, demonstration, and technology deployment program. The program focus includes reducing emissions from fossil fuels, developing offshore resources, and enhancing domestic supply and technology for independent producers.	*Sec. 2401.* Funding is authorized for R&D programs on coal and related technologies.	

Provision	Current Law	Senate	House	Comments
Oil and gas R&D	Research and development funding for oil and gas programs is appropriated through the Interior and Related Agencies bill.	*Sec. 1231.* The DOE fossil energy program shall include oil and gas R&D.	*Secs. 2421-2424.* Funding is authorized for DOE oil and gas research and development, and the Interior Department must submit a report to Congress assessing oil and gas reserves in the Gulf of Mexico.	
Enhanced fossil energy research and development	R&D for methane hydrates and for reduced emissions from fossil fuels has been funded through the DOE's Fossil Energy Program.	*Sec. 1231.* The DOE fossil energy program shall include offshore resources, including methane hydrates.	*Secs. 2441-2451.* The National Energy Technology Laboratory (NETL) and the U.S. Geological Survey (USGS) shall explore new technologies for ultra-deepwater exploration and production for oil, gas and methane hydrates. A research organization shall be created to award competitive grants. An Ultra-Deepwater and Unconventional Gas Research Fund shall be established from U.S. Treasury loans, oil and gas lease income, and additional appropriations. These sections may be cited as the "Natural Gas and Other Petroleum Research, Development, and Demonstration Act of 2001."	
Clean coal power plants	A Clean Coal Initiative was established in FY2002 by the Bush Administration which essentially replaces the Clean Coal Technology Program (CCTP), which began in FY1986.	*Sec. 1232.* DOE shall carry out projects to demonstrate the commercial application of advanced lignite and coal based technology for power plants.	*Sec. 5000-5008.* The Clean Coal Power Initiative (CCPI) is established as an industry/government cost sharing program to demonstrate advanced technologies with an emphasis on coal-based gasification projects. These sections may be cited as the "Clean Coal Power Initiative Act of 2001."	It is expected that $40 million deferred from FY2002 will be made available in FY2003 to fund the existing CCTP. According to DOE's Office of Fossil Energy, the balance of the program's funding will eventually be obligated for CCTP.
Safe and efficient mining technologies	Coal R&D in the DOE budget is funded under the Fossil Energy Program.	*Sec. 1233.* A federal-private sector research partnership is set up to establish research priorities for advanced coal mining technologies.	No comparable provision.	
Ultra-deepwater and unconventional drilling	Same as above. See Sec. 1231 of the Senate bill.	*Sec. 1234.* DOE shall establish a program to conduct long-term R&D into ultra-deepwater development and environmental mitigation technologies.	*Secs. 2442-2451.* The National Energy Technology Laboratory (NETL) and the U.S. Geological Survey (USGS) shall explore new technologies for ultra-deepwater exploration.	This program in the Senate bill is related to the enhanced fossil R&D program in Senate Sec. 1231.
R&D for new natural gas transportation technologies.	No specific provision	*Sec. 1235.* DOE shall conduct a comprehensive R&D program on natural gas transportation and distribution technologies and distributed energy systems.	No comparable provision.	

Provision	Current Law	Senate	House	Comments
Oil, gas, and fuel cell R&D authorization	General DOE authority.	Fossil fuel R&D funding authorizations are included in various sections.	*Sec. 2481.* Funding is authorized for FY2002 to FY2004 for operation and maintenance for oil, gas, and fuel cell R&D programs. Funds in this section may not be used for gas hydrates, fossil energy environmental restoration, or research, development, demonstration, and commercial application on coal and related technologies.	
Office of Arctic Energy authorization	Office established by Sec. 3197 of P.L. 106-398.	*Sec. 1236.* Funding is authorized for the Office of Arctic Energy.	No comparable provision.	
Coal Leasing	Mineral Leasing Act of 1920 (30 U.S.C. 181).	No comparable provision.	*Secs. 6701-6704.* The Secretary of the Interior shall not recover from applicants the costs of processing coal lease applications.	
Clean coal technology loan	No specific loan provision.	*Sec. 1237.* Funding is authorized for a $125 million loan to an experimental clean coal plant.	No comparable provision.	

Nuclear Energy

Provision	Current Law	Senate	House	Comments
Enhanced nuclear energy research and development	DOE shall carry out and support research and development activities related to nuclear energy (AEA Section 31).	*Sec. 1241.* DOE shall conduct an R&D program to enhance nuclear energy. The program shall support improvements in existing commercial reactors, examine advanced reactor designs, attract new nuclear science and engineering students, and maintain isotope production capability. Funding is authorized for FY2003 through FY2006.	*Sec. 2344.* Funding for operation and maintenance of DOE nuclear energy R&D facilities is authorized from FY2002 through FY2004. Certain nuclear construction programs are authorized through FY2005.	General authority for all DOE nuclear energy R&D activities is provided by the Atomic Energy Act of 1954 and the Department of Energy Organization Act (P.L. 95-91).
University nuclear science and engineering support	DOE may provide grants and contributions to the cost of construction and operation of university reactors (AEA Section 31).	*Sec. 1242.* DOE shall provide support to university nuclear science and engineering programs, including programs to help students and faculty, helping to maintain university reactors and infrastructure, and interaction between university nuclear programs and DOE national laboratories. Funding is authorized for FY2003 through FY2006.	*Secs. 2301-2304.* DOE shall establish a program to enhance human resources and infrastructure in nuclear engineering and science. The program shall provide graduate and undergraduate fellowships; assist in faculty recruitment and retention; invest in nuclear engineering and science research; encourage collaborative research; help maintain and operate university reactors; and conduct related activities. Appropriations are authorized for FY2002 through FY2006.	The House and Senate provisions would add new statutory requirements for the existing DOE University Reactor Fuel Assistance and Support Program.

Provision	Current Law	Senate	House	Comments
Nuclear Energy Research Initiative	No specific authorization.	*Sec. 1243.* From funding authorized for Enhanced Nuclear Energy Research and Development (Section 1241), DOE shall provide grants under the Nuclear Energy Research Initiative (NERI).	*Sec. 2341.* DOE shall provide competitive, peer-reviewed grants under NERI for developing scientific breakthroughs and other advances in nuclear energy and reactor technology. Funding is authorized for FY2002 through FY2004.	NERI has been funded since FY1999 under guidance provided by appropriations report language. The program provides peer-reviewed research grants to universities, national laboratories, and industry.
Nuclear Energy Plant Optimization	No specific authorization.	*Sec. 1244.* From amounts authorized under Section 1241, DOE shall support a Nuclear Energy Plant Optimization (NEPO) grants program for projects to improve nuclear power plant reliability, availability, and productivity. The program shall require industry cost-sharing of at least 50%.	*Sec. 2342.* Similar to Senate provision; explicitly states that the program is to be conducted jointly with the nuclear industry. Funding authorized for FY2002 through FY2004.	NEPO has been funded since FY2000 under guidance provided by appropriations report language.
Nuclear energy technology development	No specific authorization.	*Sec. 1245.* From amounts authorized under Section 1241, DOE shall develop a "technology roadmap" for designing and developing new U.S. commercial nuclear reactors. The roadmap shall include a study of advanced, "Generation IV" reactor designs to support a decision on selecting the most promising of those designs for commercial deployment.	*Sec. 2343.* DOE shall develop a plan for selecting at least one "Generation IV" reactor design by the end of FY2004 for demonstration by a public/private partnership. Appropriations are authorized from FY2002-FY2004.	The programs authorized by the House and Senate provisions are similar to DOE's Nuclear Energy Technologies Program, which has been funded since FY2001 under guidance provided by appropriations report language.
Uranium mining and conversion R&D	No specific authorization.	No provision.	*Secs. 305-306.* Research and development programs are authorized on improved technologies for uranium mining and for the conversion of mined uranium into uranium hexafluoride.	

Fundamental Energy Science

Provision	Current Law	Senate	House	Comments
Authorization of appropriations for the Office of Science	General authority provided by DOE Organization Act (P.L. 95-91).	*Sec. 1251.* Appropriations are authorized for the Office of Science for fiscal year 2003 (an increase of approximately 20% above the 2002 appropriation) and subsequent fiscal years through 2006 (annual increases of	*Sec. 2581.* Appropriations are authorized for the Office of Science for fiscal year 2002 only. Within the overall authorization, appropriations are authorized for research on previous metal catalysts. In addition to the	

Provision	Current Law	Senate	House	Comments
		approximately 10%). Broad program direction is provided regarding scientific scope, the role of facilities, the importance of certain research areas, and connections with the Department's applied programs.	overall authorization, appropriations are authorized for five specified construction projects within the Office of Science. None of the construction funding may be used at DOE nuclear weapons laboratories or production facilities.	
Office of Science nanoscale science and engineering program	No specific provision.	*Sec. 1252.* A nanoscience and nanoengineering R&D program, including research centers and major instrumentation, is established within the Office of Science. Appropriations for fiscal years 2003 through 2006 are authorized as part of the overall authorization given in Sec. 1251.	No similar provision.	The bulk of this program would currently fall within the scope of the materials sciences subprogram of the basic energy sciences program in the Office of Science.
Office of Science advanced scientific computing program	General DOE authority.	*Sec. 1253.* The Office of Science advanced scientific computing program is expanded to include, as well as research, the deployment of high-performance computing and collaboration tools for research in DOE mission areas. Appropriations are authorized for fiscal year 2003 (an increase of approximately 75% above the 2002 appropriation) and for subsequent fiscal years through 2006.	No similar provision.	
Office of Science fusion energy sciences program	General DOE authority.	*Sec. 1254.* The Secretary shall submit an overall plan for the nuclear fusion program, including certain specified objectives. In addition, the Secretary shall submit a plan for construction of a burning plasma experiment in the United States. If the Secretary makes certain findings, he may also submit a plan for U.S. participation in an international burning plasma experiment. Appropriations are authorized for fiscal year 2003 (an increase of approximately 35% above the 2002 appropriation) and for subsequent fiscal years through 2006.	Sec. 2501-2505 (Fusion Sciences Act of 2001). The Secretary shall submit an overall plan for the fusion program, including the objectives specified by the Senate bill plus some additional objectives. The Secretary shall submit a plan for construction of a burning plasma experiment in the United States and may submit a plan for U.S. participation in an international burning plasma experiment. Appropriations are authorized for fiscal years 2002 and 2003 (at the same level as in the Senate bill) but not subsequent years. Part of the authorized appropriations may be used to	The two bills differ somewhat in their language requiring plan development to include consultation with advisory committees. The objectives specified for the overall plan as described would not require a major departure from the scope of the current program, but might require an expanded effort. A burning plasma is one in which the energy produced by fusion exceeds the energy needed to heat the plasma to initiate fusion and is sufficient to sustain fusion conditions. A burning plasma is a necessary step toward development of a fusion power plant. DOE is not currently funding any design or construction work

Provision	Current Law	Senate	House	Comments
			fund centers of excellence. Certain congressional findings are made regarding the status and potential importance of fusion energy.	that would lead to a burning plasma experiment.
Spallation Neutron Source	No specific authorization; funded through Energy and Water Development Appropriations Acts since FY1999.	No similar provision.	*Sec. 2521-2524.* Appropriations are authorized for the Spallation Neutron Source project in the Office of Science. The Secretary shall report on the progress of the project, including cost considerations, along with the annual budget submission. Limits are set on total project expenditures.	
Strategy for facilities and infrastructure at Office of Science nonmilitary laboratories	No provision.	No similar provision.	*Secs. 2541-2542.* DOE shall develop a strategy and 10-year implementation plan for its nonmilitary laboratories for maintaining needed existing facilities and infrastructure, closing unneeded facilities, making facility modifications, and building new facilities. Nonmilitary laboratories are defined as specified labs or those consistent with the mission of the Office of Science.	
Public notice requirements for Office of Science user facilities	No provision.	No similar provision.	*Sec. 2543.* DOE shall provide broad public notice whenever it makes available a user facility or seeks input about a user facility from potential users. Participation in the establishment or operation of a user facility shall be determined by full and open competition.	

Energy, Safety, and Environmental Protection

Provision	Current Law	Senate	House	Comments
Energy infrastructure protection and	General DOE authority.	*Sec. 1261.* DOE shall conduct a program for research, development, and deployment of	*Sec. 2241-2243.* The Secretary of Energy is directed to develop and implement a comprehensive research, development,	The Department of Energy (DOE) currently has a Transmission Reliability Program under the Office of Power Technologies. The Transmission Reliability

Provision	Current Law	Senate	House	Comments
reliability research and development		technologies to protect energy infrastructure.	demonstration, and commercial application program to ensure the reliability, efficiency, and environmental integrity of the electric transmission system.	Program conducts research to improve the reliability of the U.S. electric power system. The Program's appropriations for FY2002 is $4.5 million.
R&D for remediation of groundwater from energy activities	No specific provision.	*Sec. 1262.* DOE shall conduct research to improve methods for environmental restoration of groundwater contaminated by oil and gas production and other energy activities. Annual funding of $10 million is authorized for FY2003 through 2006.	No provision.	

Climate Change Science and Technology

Department of Energy Programs

Provision	Current Law	Senate	House	Comments
DOE global change science research	New program.	*Sec. 1301.* DOE's Office of Science shall conduct a comprehensive research program to understand and address the effects of energy production and use on the global climate system. Activities shall include climate modeling and integrated assessment of climate change effects on economic and social systems. Over four years, authorized appropriations are $755 million.	No provision.	
Amendments to the Federal Nonnuclear Research and Development Act of 1974	The Federal Nonnuclear Research and Development Act of 1974 (42 U.S.C. 5905) authorizes a comprehensive program of research, development and demonstration of nonnuclear energy resources to facilitate their commercialization.	*Sec. 1302.* The Federal Nonnuclear Research and Development Act of 1974 is amended to add development of greenhouse gas reduction, removal, and sequestration technologies to its purposes, along with pursuing a long-term climate technology strategy to demonstrate a variety of technologies by which stabilization of greenhouse gases might be best achieved.	No provision.	

Department of Agriculture Programs

Provision	Current Law	Senate	House	Comments
Carbon sequestration basic and applied research	New program.	*Sec. 1311.* The Secretary of Agriculture is required to study the net sequestration of carbon by soils and plants, and study the net greenhouse gas emissions from agriculture, including the funding of basic research through competitive grants. Applied research, including competitive research grants, shall include sequestration methods and baseline methodologies, among other priorities. The Secretary may designate two research consortia to carry out required research with up to 25% of funding. Funding is authorized at $25 million annually for four years.	No provision.	
Carbon sequestration demonstration projects and outreach	New program.	*Sec. 1312.* The Secretary of Agriculture is required to fund projects to demonstrate the ability to monitor and verify carbon sequestration, and to educate farmers and ranchers about the economic and environmental benefits of conservation practices that increase sequestration. Funding is authorized at $10 million annually for four years.	No provision.	
Carbon storage and sequestration accounting research	New program.	*Sec. 1313.* The Secretary of Agriculture is required to fund research on carbon storage and sequestration accounting models and other tools that can assist landowners in quantifying carbon release, sequestration, and storage from various land practices. Five entities shall be competitively chosen for a pilot program to demonstrate and assess such tools in developing sequestration policies. Funding is authorized at $20 million annually for five years.	No provision.	

International Energy Technology Transfer

Provision	Current Law	Senate	House	Comments
Clean energy technology exports program	No provision.	*Sec. 1321.* An Interagency Working Group on Clean Energy Technology Exports is established to focus on opening and expanding energy markets and transferring clean energy technology overseas. Authorized activities include analyzing opportunities for international development, demonstration, and deployment of clean energy technology, investigating ways to improve technology transfer and technology exports to foreign countries, and making other assessments and recommendations with respect to the program's implementation. Annual reports on activities and expenditures are required.	No provision.	
International energy technology deployment program	New program.	*Sec. 1322.* Section 1608 of the 1992 Energy Policy Act is amended to include an International Energy Technology Deployment Program. Projects deployed in foreign countries that are significantly more efficient than conventional technology in terms of greenhouse gases produced per unit of energy may be eligible for loans or loan guarantees under the program. Such projects would be cost-shared with the host country: 50% host country contribution in a developed county, 10% contribution in a developing country. Funding is authorized at $100 million annually for nine years.	No provision.	

Climate Change Science and Information

Amendments to the Global Change Research Act of 1990

Provision	Current Law	Senate	House	Comments
Amendments to the Global Change Research Act of 1990	1990 Global Change Research Program Act (P.L. 101-606) establishes the Global Climate Research Program aimed at understanding and responding to global change. (15 U.S.C. 2921 et. seq.)	*Sec. 1331-1333.* Within the Global Change Research Program, the Committee on Earth and Environmental Sciences is renamed the Committee on Global Change Research, and committee membership is specified at the deputy secretary level. In addition, a subcommittee on global change research is established.	No provision.	
Change in National Global Change Research Plan	1990 Global Change Research Program Act establishes the Global Climate Research Program aimed at understanding and responding to global change. (15 U.S.C. 2934)	*Sec. 1334*. The Chairman of the National Science and Technology Council is required to develop a 10-year strategic plan for the United States Global Climate Change Research Program and submit that plan to Congress within 180 days of enactment. A revised implementation plan would also be submitted.	No provision.	
Integrated Program Office	New office.	*Sec. 1335.* The Global Change Research Act of 1990 is amended to establish within the Office of Science and Technology Policy (OSTP) an Integrated Program Office to manage coordination and integration of global change research activities and budgets, along with identifying projects to fill research gaps.	No provision.	
Research grants	The National Science and Technology Council (NSTC) oversees the U.S. Global Change Research Program (15 U.S.C. 2935, EO 12881).	*Sec. 1336.* The NSTC Committee on Global Change Research shall list priority areas for research and development on climate change that are not currently being addressed, and transmit that list to the National Science Foundation. Funding for NSF for priority areas is authorized at $17 million annually.	No provision.	
Evaluation of information	NSTC has the authority to evaluate scientific uncertainty associated with global climate change (15 U.S.C. 2936).	*Sec. 1337.* NSTC authority is expanded to include assessment and evaluation of all uncertainties and policy implications associated with global climate change. Information generated is to be evaluated by considering its usefulness to local, state and national decision makers and other stakeholders.	No provision.	

National Climate Services Monitoring

Provision	Current Law	Senate	House	Comments
Amendment of National Climate Program Act **Changes in findings**	The National Climate Program Act (15 U.S.C. 2901 *et seq.*) requires development of a national climate program to assist in understanding and responding to climate processes and their implications.	*Sec. 1341-1345.* The National Climate Program Act is amended to require the Secretary of Commerce to submit to congressional committees an action plan for a National Climate Service. The plan shall include recommendations and funding estimates for a national center for climate monitoring and predicting; a national coordinated modeling	No provision.	

Provision	Current Law	Senate	House	Comments
Tools for regional planning		strategy; a program to ensure data quality and dissemination; and mechanisms to improve coordination within government and with the academic community.		
Authorization of Appropriations				
National Climate Service Plan				
International Pacific research and cooperation	No specific provision.	*Sec. 1346.* Funding for the National Oceanic and Atmospheric Administration (NOAA), the National Aeronautics and Space Administration (NASA), and the Pacific El Nino/Southern Oscillation (ENSO) Applications Center is provided to study climate variability in the Asia-Pacific area in cooperation with the countries in the region.	No provision.	
Reporting on trends	No provision.	*Sec. 1347.* As part of the National Climate Service, the Secretary of Commerce is to establish a comprehensive atmospheric monitoring and verification program, and issue an annual report that identifies trends on local, regional, and national levels along with individual or multiple source emissions or reductions.	No provision.	
Arctic research and policy	15 U.S.C. 4102(d).	*Sec. 1348.* The Arctic Research and Policy Act is amended to provide grants for arctic research and funds to the National Science Foundation (NSF) and federal agencies for arctic research.	No provision.	
Abrupt climate change research	No provision.	*Sec. 1349.* Through NOAA, the Secretary of Commerce is to conduct research on potential abrupt climate change. Funding is authorized at $10 million annually for six years.	No provision.	

Ocean and Coastal Observing System

Provision	Current Law	Senate	House	Comments
Oceans and coastal observing system	Authorized under 10 U.S.C. 7902(a), the National Ocean Research Leadership Council prescribes policies and procedures to implement the National Oceanographic Partnership Program.	*Sec. 1351.* Through the National Ocean Research Leadership Council, the President shall establish and maintain an integrated ocean and coastal observing system for understanding, improving, and protecting coastal and marine ecosystems and other purposes.	No provision.	
Authorization of appropriations	No provision.	*Sec. 1352.* Funding is authorized for an observing system at $1.385 billion over four years.	No provision.	

Climate Change Technology

Provision	Current Law	Senate	House	Comments
NIST greenhouse gas functions	Authorized under the National Institute of Standards and Technology Act (15 U.S.C. 272), the National Institute of Standards and Technology (NIST) conducts activities to enhance industrial competitiveness and is the lead laboratory for providing measurement and calibrations to underpin technological progress.	*Sec. 1361.* The National Institute of Standards and Technology Act is amended to include research to develop enhanced measurements, calibrations, standards, and technologies to enable reduced production of greenhouse gases.	No provision.	
Development of new measurement technologies **Enhanced environmental measurements and standards**	See above.	*Sec. 1362-1363.* The Secretary of Commerce shall initiate a program to develop innovative standards and technologies for calculating greenhouse gas emissions and reductions from various sources. The National Institute of Standards and Technology Act is amended to establish within the Institute a program to perform and support research on global climate change standards and processes, focused on providing knowledge applicable to reducing greenhouse gases. Activities include developing enhanced monitoring and modeling standards; assisting the development of a baseline for future greenhouse gas emissions trading, including international trading; and assisting in developing improved industrial processes designed to reduce or eliminate greenhouse gases. This effort shall include using the expertise of the National Measurement Laboratories of the National Institute of Standards and Technology.	No provision.	
Technology development and diffusion	See above.	*Sec. 1364.* The Director of the National Institute of Standards and Technology may develop a program to support implementation of new "green" manufacturing technologies by the more than 380,000 small manufacturers.	No provision.	
Authorization of appropriations	No current authorization.	*Sec. 1365.* Funding is authorized for NIST's new global warming activities at $10 million annually for five years.	No provision.	

Climate Adaptation and Hazards Prevention

Assessment and Adaptation

Provision	Current Law	Senate	House	Comments
Regional Climate Assessment and Adaptation Program	New program.	*Sec. 1371.* The President shall establish within the Department of Commerce a National Climate Change Vulnerability and Adaptation Program for regional impacts of global climate change. The program shall submit a report to Congress within 2 years on recommended mitigation strategies and programs. Funding is authorized at $4.5 million.	No provision.	
Coastal vulnerability and adaptation	No provision.	*Sec. 1372.* The Secretary of Commerce shall conduct regional assessments of coastal vulnerability to climate change within two years of enactment, and submit to Congress regional adaptation plans to address those impacts within 3 years of enactment. Matching funds to assist coastal adaptation programs shall be provided based on the formula established in the Coastal Zone Management Act of 1972. A coastal response pilot program is also authorized. Funding for the regional assessments and grant program is authorized at $3million each, annually.	No provision.	
Barrow Arctic Research Center	New program.	*Sec. 1373.* The Secretary of Commerce shall establish a Barrow Arctic Research Center to support interagency climate change and arctic research, authorized at $35 million.	No provision.	

Forecasting and Planning Pilot Programs

Provision	Current Law	Senate	House	Comments
Remote sensing pilot projects **Database establishment** **Definitions**	New program.	*Sec. 1381-1382, 1384.* The National Aeronautics and Space Administration (NASA) may establish a competitive grant program through NOAA's Coastal Services Center for pilot projects to explore the integrated use of remote sensing and other geospatial information to address governmental adaptation needs to forecast coastal zone and land use changes from global climate change.	No provision.	
Air quality research, forecasts and warnings **Authorization of appropriations**	No provision.	*Sec. 1383, 1385.* NOAA is required to conduct regional studies and assessment of the effects of transported and transformed air pollutants. In addition, NOAA is to establish a program to provide regional air quality forecasts and warnings. Funding for the studies is authorized at $3 million annually for four years, and funding for the warning system is authorized at $5 million for FY2003 and such sums as necessary for subsequent years.	No provision.	

Management of DOE Science and Technology Programs

Provision	Current Law	Senate	House	Comments
Definitions	No provision.	*Sec. 1401.* The term "single-purpose research facility" includes 15 named DOE-owned facilities and any similar DOE organization designated as such by the Secretary.	No similar provision.	
Availability of appropriated funds	No provision.	*Sec. 1402.* Appropriations authorized under titles XII (energy R&D), XIII (climate change R&D), and XV (traineeships and fellowships) shall remain available until expended.	No similar provision.	
Cost sharing for applied energy R&D	No specific provision; various energy statutes include cost-sharing requirements.	*Sec. 1403.* Cost-sharing is required for DOE projects in energy efficiency R&D, renewable energy R&D, fossil energy R&D, and nuclear energy R&D. The non-federal share must be at least 20% for research and development projects and at least 50% for demonstration and deployment projects. The Secretary may waive or reduce these requirements under certain conditions.	*Sec. 2603.* Requirements are the same as in the Senate bill but also include R&D in the Office of Science, unless waived by the Secretary because the R&D is basic or fundamental in nature.	
Merit review of proposals	No specific provision.	*Sec. 1404.* An independent review of scientific and technical merit shall be conducted before a proposal can be funded from appropriations authorized under title XII (energy R&D), subtitle A of title XIII (DOE climate change R&D), or title XV (traineeships and fellowships).	No similar provision.	
External technical review of R&D programs	General authority for advisory committees is provided by 42 U.S.C. 7234.	*Sec. 1405.* Advisory boards shall be established for DOE R&D programs in energy efficiency, renewable energy, fossil energy, nuclear energy, and climate change technology. The requirement may be met by existing DOE boards or by boards established by the National Academy of Sciences. Existing advisory committees shall continue for R&D programs of the Office of Science.	*Sec. 2616.* The Secretary shall arrange with the National Academy of Sciences and the National Academy of Engineering to review, at least every five years, DOE R&D programs in energy efficiency, renewable energy, fossil energy, nuclear energy, and science.	
Organization and management of civilian science	DOE's administrative structure is	*Sec. 1406.* The new position of DOE Under Secretary for Energy and Science is established, with authority over the assistant secretaries	*Sec. 2561-2562.* The Director of the White House Office of Science and Technology Policy (OSTP) shall establish an advisory panel to	The DOE Office of Science funds more physical science basic research than any other federal agency. It is also the third largest

Provision	Current Law	Senate	House	Comments
and technology programs	governed by the Department of Energy Organization Act (42 U.S.C. 7132).	responsible for energy R&D, energy technology, and science, and to serve as science and technology advisor to the Secretary. The Director of the Office of Science shall become an assistant secretary, while certain advisory responsibilities are transferred to the new under secretary. An additional assistant secretary position is created, and it is the sense of the Senate that leadership for DOE missions in nuclear energy should be at the assistant secretary level.	address issues about the status of the Office of Science, look at organizational options for the Office within DOE, and suggest ways to strengthen scientific research supported by the Office. The advisory panel shall deliver its report within six months of enactment to the OSTP Director and DOE Secretary, and they shall deliver the report to Congress with their comments within nine months of enactment.	funder of basic research overall. Many in the scientific community believe that the DOE Office of Science has not fared as well as the other major basic research funding agencies—NSF, NASA, and NIH—because its status in DOE is too low.
Improved coordination of technology transfer activities	No specific provision.	*Sec. 1407.* A Technology Partnership Working Group is established, consisting of representatives of the DOE national laboratories and single-purpose research facilities, to coordinate technology transfer. A Technology Transfer Coordinator is established to oversee DOE technology transfer activities and coordinate the activities of the Technology Partnership Working Group.	No similar provision.	
Technology infrastructure program	No specific provision.	*Sec. 1408.* A program is established to help national laboratories and single-purpose research facilities stimulate the development of technology clusters, "leverage and benefit" from commercial activities, and exchange scientific and technological expertise with other organizations. A report must be submitted by January 1, 2004, on whether the program should continue and, if so, how it should be managed.	No similar provision.	
Small business advocacy and assistance	No provision.	Sec. 1409. A small business assistance program is established. A small business advocate must be	No similar provision.	

Provision	Current Law	Senate	House	Comments
		appointed at each national laboratory and, if directed by the Secretary, at each single-purpose research facility.		
Other transactions authority	42 U.S.C. 7256.	*Sec. 1410.* DOE may use other transactions to fund research projects when (1) a standard contract, grant, or cooperative agreement would be infeasible or inappropriate, (2) the research to be supported does not duplicate existing DOE programs, and (3) government funds are half or less of the total funding for the project. These transactions shall be exempt from the patent rights and invention reporting requirements of 42 U.S.C. 5908, and DOE shall not disclose confidential information submitted by non-federal participants or developed as part of a supported project. Guidelines for these transactions must be established.	*Sec. 2601(b).* DOE may use contracts, cooperative agreements, cooperative research and development agreements (CRADAs), grants, joint ventures, and "any other form of agreement available to the Secretary" under existing law—but not other transactions—to fund research projects.	Other transactions are used by the Department of Defense and certain other agencies primarily to fund research by private-sector companies. They permit the terms of the transaction to be negotiated freely between the agency and the company. Certain provisions required by federal law for standard contracts and grants, including provisions relating to intellectual property, are not required for other transactions. Opponents of giving other transactions authority to DOE are uncomfortable with this exemption. Advocates argue that existing alternatives are ill-suited for funding and managing large R&D consortia whose members have complex intellectual property relationships.
Mobility of scientific and technical personnel	No provision.	Sec. 1411. The Technology Transfer Coordinator (established by Sec. 1407) must prepare a report on disincentives to the transfer of scientific and technical personnel among the contractor-operated national laboratories and single-purpose research facilities.	No similar provision.	
National Academy of Sciences report on accelerating energy research	No provision.	*Sec. 1412.* The National Academy of Sciences must prepare a study on accelerating the cycle of energy technology research, development, and deployment.	No similar provision.	
Report on technology readiness and barriers to technology transfer	No provision.	*Sec. 1413.* The Technology Partnership Working Group (established by Section 1407) must issue biennial reports on barriers to technology transfer, ways to lower them, and the readiness for technology transfer of	No similar provision.	

Provision	Current Law	Senate	House	Comments
		technologies developed under the DOE energy efficiency, renewable energy, fossil energy, and nuclear energy programs.		
United States-Mexico energy technology cooperation	No provision.	*Sec. 1414.* Establishes a collaborative RD&D program in the DOE Office of Environmental Management to promote energy-efficient, environmentally sound economic development along the United States-Mexico border.	No similar provision.	
General provisions for DOE	No existing requirement.	Some parts are comparable to Senate sections described above.	*Sec. 2601-2605.* DOE is authorized to use contracts, cooperative agreements, grants, and joint ventures to engage private industry in the conduct of its work. Further, DOE is required to provide information outreach about research and technology developments to manufacturers, consumers, state and local governments, and other parties. DOE is required to use competitive procedures to seek parties for management and operations contracts. For partnerships with the private sector, R&D projects require a 20% minimum cost-share from private partners, and demonstration projects require a 50% minimum. Reprogramming of DOE funds is allowed only if prior notification is given to Congress and other certain funding constraints are followed.	
Other miscellaneous provisions	No existing requirement.	Some parts are comparable to the Senate sections described above.	*Sec. 2611-2616.* Prior notification to Congress is required before DOE may implement reorganization of any programs. For any civilian construction project without a specific funding level, but estimated to exceed $5 million, DOE must report to Congress on the need and cost for the project. For a civilian project with a specific funding level, but for which the cost estimate exceeds authorized funding by more than 10%, the project may be halted before construction starts. Also, DOE must complete a conceptual design before requesting funds to build a project estimated at more than $5 million. Further, if the design study will cost	

Provision	Current Law	Senate	House	Comments
			more than $750,000, DOE must request design funds before seeking construction funds. Certain reports initiated by the Report of the National Energy Policy Development Group are required, upon their completion, to be transmitted to Congress. Also, DOE is required to seek periodic reviews and assessments of its programs by the National Academies of Science and Engineering.	

Personnel and Training

Provision	Current Law	Senate	House	Comments
Workforce trends in the energy industry and traineeship grants in areas of personnel shortfall	No provision.	*Sec. 1501.* The Energy Information Administration shall monitor trends in the energy industry technical workforce, include statistics on these trends in its annual reports, and report to Congress when a significant personnel shortfall occurs or is forecast. A grant program is created for training technical personnel in shortfall areas.	No similar provision.	
Postdoctoral and senior research fellowships in energy research	No specific provision.	*Sec. 1502.* A program of postdoctoral fellowships in energy R&D is established. The Secretary may arrange for this program to be administered by the National Academy of Sciences. A program of senior research fellowships in energy R&D is also established.	No similar provision.	The National Academy of Science currently administers postdoctoral fellowship programs for several federal agencies.
Training guidelines for electric energy industry personnel	None.	*Sec. 1503.* DOE must work with utilities and unions to create model employee training guidelines to increase electric reliability.	No similar provision	
National Center on Energy Management and Building Technologies	No provision.	*Sec. 1504.* DOE is required to establish a center to provide research, education, and training for improved building energy efficiency and indoor air quality.	*Sec. 125.* DOE is required to create an Advanced Building Efficiency Test Program, led by a university, that would develop, test and demonstrate innovative technologies. Also, *Sec.*	While the Senate and House provisions are

Provision	Current Law	Senate	House	Comments
			2181 directs the Office of Science and Technology Policy to create an interagency group to conduct a National Building Performance Initiative that sets out a plan to reduce building energy costs by 30%.	related, they are quite different.
Improved access for women and minorities to energy-related scientific and technical careers	No provision.	*Sec. 1505*. DOE education programs must give priority to activities that encourage women and minorities to pursue scientific and technical careers. DOE national laboratories (and other DOE science facilities if so directed by the Secretary) must increase the participation of historically black colleges and universities, Hispanic-serving institutions, and tribal colleges in activities such as research, equipment transfer, training, and mentoring. DOE is to report on activities under this section within two years.	No similar provision.	
National Power Plant Operations Technology and Education Center	None.	*Sec. 1506*. DOE must establish a center to conduct training and certification of operators at electric power generating plants.	No similar provision	
Federal mine inspectors	The Secretary of Labor uses the Mine Safety and Health Administration (MSHA, 29 U.S.C. 557) to carry out the Mine Safety and Health Act of 1977, (30 U.S.C. 801).	*Sec. 1507*. To maintain a sufficient number of qualified mine inspectors, the Department Labor shall hire and train new mine inspectors.	No provision.	Many of the nation's mine inspectors are eligible or soon eligible to retire.

Technology Assessment

Provision	Current Law	Senate	House	Comments
Science and Technology Assessment Service	The Office of Technology Assessment was established in 1972 by P.L. 92-484 (2 U.S.C. 471 et seq.). Although still authorized, it has not been funded since FY1995 and no longer operates.	*Sec. 1601*. A Science and Technology Assessment Service is established within the legislative branch to provide Congress with information on national issues in science and technology policy.	No similar provision.	The service created by the Senate bill would be similar in some ways to the former Office of Technology Assessment, but with a modified structure and scope.

Studies

Provision	Current Law	Senate	House	Comments
Regulatory reviews	No existing requirement.	*Sec. 1701.* Each federal agency is required to report every five years on regulatory changes needed to remove barriers to market entry for new energy-efficient technologies (such as fuel cells) and to market development for existing technologies.	*Sec. 161 and Sec. 6103.* Each federal agency is directed to report on regulatory barriers to energy-efficient technologies every five years.	The provisions are nearly identical.
Insular areas energy security/assessment of dependence of Hawaii on oil	No requirement.	*Sec. 1702.* DOE must begin a study within 60 days of enactment that will assess the short- and long-term threats to the economy of Hawaii posed by insecure supply and volatile prices. Not later than 300 days after the date of enactment of this section, the Secretary of Energy shall submit to Congress a report detailing the Secretary's findings, conclusions, and recommendations.	*Sec. 6801.* The Secretary of the Interior must update the 1982 Territorial Energy Assessment, and prepare long-term plans to reduce by 2010 dependence of insular areas upon energy imports.	The dependence of insular areas has been periodically assessed.
Study of siting an electric transmission system on Amtrak right-of-way	None.	*Sec. 1703.* The Secretary of Energy must contract with Amtrak to study the feasibility of building and operating a new electric transmission system on the Amtrak right-of-way in the Northeast Corridor.	No similar provision	
Updating of insular area renewable energy and energy efficiency plans	Sec. 604 of P.L. 96-597 initiated a study of energy potential for insular areas.	*Sec. 1704.* Insular areas are directed to reassess energy production, use, infrastructure, resources, and long-term energy plans.	*Sec. 6801.* The House provision is similar to that in the Senate bill.	
Consumer Energy Commission	No provision.	*Sec. 1705.* An 11-member commission is established to study energy price spikes since 1990. First meeting is to be held not more than 60 days after enactment; report is called for in 180 days.	No provision	
Energy infrastructure across the Great Lakes	No provision.	*Sec. 1706.* The Secretary of Energy is to conduct a study of the environmental impacts of any energy infrastructure (including gas pipelines) transiting the Lakes and how they might be minimized. An NAS advisory committee shall be established.	*Sec. 6235.* State and provincial bans on drilling in the Great Lakes are encouraged.	

Provision	Current Law	Senate	House	Comments
Study of existing rights-of-way on federal lands	No provision.	No provision.	*Sec. 6101.* Each federal agency must review energy transport rights-of-way under its jurisdiction and report to the Secretary of Energy and to FERC on whether the right-of-way can support new or additional capacity and what changes might be called for to accommodate additional capacity. In performing the review, agency heads should consult with affected states and other stakeholders and consider safety issues involved in such expansions.	
Coordinating and planning the natural gas transportation system expansion	No provision.	No provision.	*Sec. 6106.* The Secretary of Energy and the FERC Chairman must conduct a study of Western states' natural gas needs. The study would include: Western state officials' forecasts, such as those of the California Energy Commission; a review of gas power plant construction projects, both underway and planned; and a review of the current long-distance transmission systems, their capacity and how they interrelate. Recommendations for coordinated infrastructure development in the Western states would be reported to the House Energy and Commerce Committee and Senate Energy and Natural Resources Committee within six months. The Chairman of FERC shall also report on how the report's conclusions will figure in reviewing pipeline construction permits. applications.	An Administration goal has been to facilitate energy transportation system development by removing perceived bottlenecks posed by the administrative and regulatory process. This issue was highlighted by a shortage of natural gas transportation capacity in California during 2000 and the early months of 2001.
Study of shipping routes for research reactor spent fuel	No provision.	*Sec. 1707.* The National Academy of Sciences shall study federal procedures for selecting transportation routes for spent nuclear fuel from research reactors.	No provision.	
Report on energy savings and water use	No provision.	Sec. 1708. DOE is required to report on cost-effective improvements to reduce energy use at municipal water and waste treatment facilities.	No provision.	
Report on research on hydrogen production and use	No provision.	*Sec. 1709.* DOE is directed to report on any projects at DOE nuclear facilities that involve hydrogen production and use in fuel cell	No provision.	

Provision	Current Law	Senate	House	Comments
		development or involve other alternative energy production technologies.		
Other energy conservation provisions	No provisions.	No provision.	*Sec. 162-165.* To reduce fuel use and emissions, EPA is directed to study the use of heating, air conditioning and other services at truck stops and other locations to reduce idling of heavy trucks and other vehicles (Sec. 162). To reduce oil waste and air pollution, a study of oil bypass filtration technology and prospects for use in federal fleets is mandated (Sec. 163). To reduce waste of natural gas, a study is required on using small cogeneration equipment to use excess gas flared at petrochemical facilities (Sec. 164). To conserve fuel and reduce traffic congestion, a study of potential benefits of widespread telecommuting is called for (Sec. 165).	

Critical Energy Infrastructure

Department of Energy Programs

Provision	Current Law	Senate	House	Comments
Definitions	None	*Sec. 1801.* Provides definitions used in the title.	No similar provision	
Role of the Department of Energy	None.	*Sec. 1802.* The Department of Energy Organization Act is amended to clarify that energy infrastructure security is part of DOE's mission.	No similar provision	
Critical energy infrastructure programs	None.	*Sec. 1803.* The Secretary of Energy is authorized to establish programs of financial, technical, and administrative assistance related to critical energy infrastructure security, consistent with overall national infrastructure security plans of the President.	No similar provision	
Advisory committee on energy infrastructure security	None.	*Sec. 1804.* A broad-based advisory committee is established to review DOE policy and activities to improve energy infrastructure security.	No similar provision	
Best practices and standards for energy infrastructure security	None.	*Sec. 1805.* The Secretary of Energy is authorized to support private-sector efforts to develop best practices and standards for energy infrastructure security.	No similar provision	

Department of the Interior Programs

Provision	Current Law	Senate	House	Comments
Outer Continental Shelf energy infrastructure security	Deepwater OCS activity is conducted under the Outer Continental Shelf of 1953 (43 U.S.C. 1331).	*Sec. 1811*. The Secretary of the Interior shall establish an OCS Energy Infrastructure Security Program to provide funds to states to protect against threats to OCS facilities and related infrastructure.	No provision.	
Arctic National Wildlife Refuge oil and gas leasing	Oil and gas leasing in the Arctic National Wildlife Refuge (ANWR) is prohibited under provisions of the Alaska National Interest Lands Conservation Act of 1980 (ANILCA).	No provision.	*Secs. 6501-6511*. The prohibition on oil and gas leasing in the coastal plain of the Arctic National Wildlife Refuge (ANWR) is repealed. A leasing process is established under the Mineral Leasing Act of 1920, and the provision directs that not more than 2,000 acres of surface area be used for carrying out oil and gas development on the coastal plain.	The Senate defeated two motions to invoke cloture on two separate amendments offered by Senators Stevens and Murkowski that would have allowed limited drilling in ANWR. Both amendments were withdrawn. The House bill does not specify whether the 2,000 acres of surface area allowed for development activities must be contiguous.

Energy Tax Incentives, consisting of sections 1900-2508 in the Senate bill and sections in the House bill, are listed at the end of the report after the authorization tables.

Iraq Oil Import Restriction

Provision	Current Law	Senate	House	Comments
Iraq oil import restriction – title and findings	No provision.	*Sec. 2601*. The Iraq Petroleum Import Restriction Act of 2002 finds that Iraq is in violation of U.N. Res. 687, regarding destruction of weapons of mass destruction, as well as U.N. Res. 661, regarding smuggled oil exports. Importing oil from Iraq is declared not consistent with U.S. foreign policy and national security interests.	No provision.	
Prohibition of Iraq oil imports	No provision.	*Sec. 2602*. Direct or indirect oil imports from Iraq are banned.	No provision.	
Termination/	No provision.	*Sec. 2603*. Imports from Iraq may resume upon presidential certification to Congress that Iraq is in compliance with U.N. Resolutions 687 & 986, that it has stopped compensating suicide bomber families, or that such imports are no longer contrary to U.S. interests.	No provision.	

Provision	Current Law	Senate	House	Comments
presidential certification				
Humanitarian interests	No provision.	*Sec. 2604.* It is the sense of the Senate that the President should encourage public and private humanitarian aid so the Iraqi people will not be adversely impacted.	No provision.	
Definitions	No provision.	*Sec. 2605.* U.N. Resolutions 661 (oil exports and smuggling), 687 (weapons of mass destruction), and 986 (the oil-for-food program) are defined.	No provision.	
Effective date	No provision.	*Sec. 2606.* The prohibition on Iraq oil imports starts 30 days after enactment.	No provision.	

Miscellaneous Provisions

Provision	Current Law	Senate	House	Comments
Fair treatment of presidential judicial nominees	No provision.	*Sec. 2701.* It is the sense of the Senate that the Senate Judiciary Committee should hold regular hearings on judicial nominees and expeditiously schedule hearings on nominees submitted May 9, 2001, and resubmitted September 5, 2001.	No provision.	
Buy American	Buy American Act (41 U.S.C. 10a-10c).	No provision.	*Sec. 7101.* No one convicted of violating the Buy American Act may receive funds authorized in this act.	The Buy American Act requires that articles, materials, or supplies, purchased for public buildings or public works in the United States be manufactured in the United States, unless it is not in the public interest or is cost prohibitive to do so. The articles, materials, or supplies should be in reasonably available commercial quantities and of satisfactory quality.
Study of aircraft emissions	No provision.	No provision.	*Sec. 803.* Within 60 days of enactment, the Secretary of Transportation and the Administrator of the Environmental Protection Agency are required to commence a study to determine the impact of aircraft emissions on air quality in ozone nonattainment areas. The study, which is to culminate in a report to Congress within 180 days of commencement, is to	

Provision	Current Law	Senate	House	Comments
			focus on the impact of emissions by aircraft idling at airports, with recommendations concerning how such emissions may be reduced.	

Funding Authorizations- Tables 2 and 3.

Table 2. Authorized Appropriations in Senate bill.

Senate	in millions	FY 02*	FY 03*	FY 04	FY 05	FY 06	FY 07	FY02-07	FY08-11	FY 02-11	House
Division A	**Reliable and Diverse Power Generation and Transmission**										
TITLE II	ELECTRICITY										
Subtitle B	Amendments to the Public Utility Holding Company Act										
Sec. 237	Authorization of appropriations.		ss					ss		ss	NE
											NE
Subtitle E	Renewable Energy and Rural Construction Grants										
Sec. 261	Renewable energy production incentive FY 03-23		ss	ss	ss	ss	ss	ss	ss	ss	Sec. 602
Sec. 264	Rural construction grants		20.0	20.0	20.0	20.0	20.0	100.0	40.0	140.0	NE
TITLE IV	INDIAN ENERGY										
Sec. 403	Comprehensive Indian Energy Programs	ss						ss		ss	NE
Sec. 407	Federal PMA power delivery studies		ss	ss				ss		ss	NE
Sec. 408	Feasibility study of wind & hydropower demonstration project	0.5						0.5		0.5	NE
TITLE V	NUCLEAR POWER										
Subtitle B	Miscellaneous Provisions										
Sec. 512	Thorium reimbursement	90.0	55.0	20.0	20.0	20.0	20.0	225.0		225.0	NE
Sec. 514	Nuclear Power 2010		ss					ss		ss	NE
Sec. 516	Decommissioning pilot program		16.0					16.0		16.0	NE
Subtitle C	NRC Personnel Crisis										

Senate	in millions	FY 02*	FY 03*	FY 04	FY 05	FY 06	FY 07	FY02-07	FY08-11	FY 02-11	House
Sec. 542	NRC training program		1.0	1.0	1.0	1.0		4.0		4.0	NE
	Subtotal Division A	**90.5**	**92.0**	**41.0**	**41.0**	**41.0**	**40.0**	**345.5**	**40.0**	**385.5**	
Division B	**Domestic Oil and Gas Production and Transportation**										
TITLE VI	OIL AND GAS PRODUCTION										
Sec. 601	Strategic Petroleum Reserve	ss						ss		ss	NE
Sec. 602	Federal onshore leasing programs for oil and gas		60.0	60.0	60.0	60.0		240.0		240.0	NE
Sec. 605	Orphaned and abandoned oil and gas well program		5.0	5.0	5.0			15.0		15.0	NE
Sec. 611	Authorization of Appropriations		ss					ss		ss	NE
TITLE VII	NATURAL GAS PIPELINES										
Subtitle C	Pipeline Safety										
Sec. 772	Authorization of Appropriations		64.0	64.0	64.0	6.0	6.0	204.0	0.0	204.0	NE
	Subtotal Division B	**ss**	**65.0**	**65.0**	**65.0**	**60.0**	**0.0**	**255.0**	**0.0**	**255.0**	
Division C	**Diversifying Energy Demand and Improving Efficiency**										
TITLE VIII	FUELS AND VEHICLES										
Subtitle A	CAFE Standards, Alternative Fuels & Advanced Technology										
Sec. 803	Maximum feasible average fuel economy	ss						ss		ss	NE
Sec. 816	Authorization of appropriations.		50.0	60.0	70.0	80.0		260.0		260.0	Sec. 2141
Sec. 820B	Commercial by-products from municipal solid waste loan guarantee program	ss						ss		ss	NE
Subtitle B	Additional Fuel Efficiency Measures										
Sec. 823	Conserve by bicycling program		5.5					5.5		5.5	NE
Subtitle C	Federal Reformulated Fuels										
Sec. 832	Leaking underground storage tanks. (LUST)		250.6	30.35	30.35	30.35	30.35	372.0		372.0	Sec. 504

Senate	in millions	FY 02*	FY 03*	FY 04	FY 05	FY 06	FY 07	FY02-07	FY08-11	FY 02-11	House
	Subtotal, Title VIII, Fuels and Vehicles	ss	306.1	90.35	100.35	110.35	30.35	637.5		637.5	
TITLE IX	ENERGY EFFICIENCY AND ASSISTANCE TO LOW INCOME CONSUMERS										
Subtitle A	Low Income Assistance and State Energy Programs										
Sec. 901	LIHEAP		3,400.0	3,400.0	3,400.0			10,200.0		10,200.0	Sec. 134
	Weatherization assistance		325.0	400.0	500.0			1,225.0		1,225.0	Sec. 133
Sec. 902	State energy conservation grants		100.0	100.0	125.0	ss	ss	325.0	ss	325.0	Sec. 131
Sec. 903	Energy efficient schools		200.0	210.0	220.0	230.0	ss	860.0	ss	860.0	Sec. 132
Sec. 904	Low income community energy efficiency pilot program		10.0	10.0	10.0			30.0		30.0	NE
Subtitle B	Federal Energy Efficiency										
Sec. 913	Federal building performance standards	ss						ss		ss	Sec. 125
Sec. 918	Federal energy banks		250.0	250.0	250.0	250.0		1,000.0		1,000.0	NE
	Subtotal, Title IX, State Programs		4,285.0	4,370.0	4,505.0	480.0	0.0	13,640.0	ss	13,640.0	
	Subtotal Division C	**ss**	**4,591.1**	**4,460.4**	**4,605.4**	**590.4**	**30.4**	**14,277.5**	**ss**	**14,277.5**	
Division D	**Integration of Energy Policy and Climate Change Policy**										
Title X	NATIONAL CLIMATE CHANGE POLICY										
Subtitle B	Climate Change Strategy										
Sec. 1013	National climate change strategy		ss					ss		ss	NE
Sec. 1014	Office of National Climate Change Policy		5.0	5.0	5.0	5.0	5.0	25.0	20.0	45.0	NE
Sec. 1015	Office of Climate Change Technology		4,750.0					4,750.0		4,750.0	Sec. 2172
Title XI	NATIONAL GREENHOUSE GAS DATABASE										
Sec. 1111	Authorization of appropriations		ss					ss		ss	NE
	Subtotal Division D		**4,755.0**	**5.0**	**5.0**	**5.0**	**5.0**	**4,775.0**	**20.0**	**4,795.0**	

Senate	in millions	FY 02*	FY 03*	FY 04	FY 05	FY 06	FY 07	FY02-07	FY08-11	FY 02-11	House
Division E	**Enhancing Research, Development, and Training**										
TITLE XII	ENERGY RESEARCH AND DEVELOPMENT PROGRAMS [a]										
Subtitle A	Energy Efficiency										
Sec. 1211	Enhanced energy efficiency research and development		700.0	784.0	878.0	983.0		3,345.0		3,345.0	Sec. 2161
Sec. 1213	Next generation lighting initiative		50.0	50.0	50.0	50.0	50.0	250.0	200.0	450.0	Sec. 2161
Sec. 1214	Railroad efficiency		60.0	70.0				130.0		130.0	Sec. 152
	Subtotal, Energy Efficiency		810.0	904.0	928.0	1,033.0	50.0	3,725.0	200.0	3,925.0	
Subtitle B	Renewable Energy										
Sec. 1221	Enhanced renewable energy research and development		500.0	595.0	683.0	733.0		2,511.0		2,511.0	Sec. 2261
Sec. 1222	*Bioenergy part of Sec. 1221 total*										Sec. 2225
	Biopower Energy Systems		*60.3*	*69.3*	*79.6*	*86.3*		*295.5*		*295.5*	
	Biofuels Energy Systems		*57.5*	*66.1*	*76.0*	*81.4*		*281.0*		*281.0*	
Sec. 1223	Hydrogen R&D										Sec. 2210
	Matsunaga Hydrogen R&D and Demonstration program		65.0	70.0	75.0	80.0		290.0		290.0	
	Fuel Cells - Hydrogen Future Act		25.0	30.0	35.0	40.0		130.0		130.0	
	Subtotal, Renewable Energy		590.0	695.0	793.0	853.0		2,931.0		2,931.0	
Subtitle C	Fossil Energy										
Sec. 1231	Enhanced fossil energy research and development		485.0	508.0	532.0	558.0		2,083.0		2,083.0	Sec. 2424
Sec. 1232	Power plant improvement initiative		0.2	0.2	0.2	0.2		0.8	1.0	1.8	Sec. 5005
Sec. 1233	R&D for advanced safe and efficient coal mining technologies		12.0	15.0				27.0		27.0	NE
Sec. 1235	R&D for new natural gas transportation technologies										NE
Sec. 1236	Authorization of appropriations for Office of Arctic Energy		25.0	25.0	25.0	25.0	25.0	125.0	100.0	225.0	NE
Sec. 1237	Clean Coal Technology Loan		125.0					125.0		125.0	NE
	Subtotal, Fossil Energy		647.2	548.2	557.2	583.2	25.0	2,235.8	101.0	2,336.8	

Senate	in millions	FY 02*	FY 03*	FY 04	FY 05	FY 06	FY 07	FY02-07	FY08-11	FY 02-11	House
Subtitle D	Nuclear Energy										
Sec. 1241	Enhanced nuclear energy research and development.										Sec. 2344
	Core nuclear research, university nuclear science		100.0	110.0	120.0	130.0		460.0		460.0	
	Nuclear research capacity and infrastructure		200.0	202.0	207.0	212.0		821.0		821.0	
	Subtotal, Nuclear Energy		300.0	312.0	327.0	342.0		1,281.0		1,281.0	
Subtitle E	Fundamental Energy Science										
Sec. 1251	Enhanced programs in fundamental energy science.		3,785.0	4,153.0	4,586.0	5,000.0		17,524.0		17,524.0	Sec. 2581
Sec. 1252	*Nanoscale science and engineering research.*		*270.0*	*290.0*	*310.0*	*330.0*		*1,200.0*		*1,200.0*	NE
Sec. 1253	*Advanced scientific computing for energy missions.*		*285.0*	*300.0*	*310.0*	*320.0*		*1,215.0*		*1,215.0*	NE
Sec. 1254	*Fusion energy sciences program and planning.*		*335.0*	*349.0*	*362.0*	*377.0*		*1,423.0*		*1,423.0*	Sec. 2505
	(Sec. 1301 & items above in italic are part of Sec. 1251 total)										
	Subtotal, Fundamental Energy Science		3,785.0	4,153.0	4,586.0	5,000.0		17,524.0		17,524.0	
Subtitle F	Energy, Safety, and Environmental Protection										
Sec. 1261	Critical energy infrastructure protection R&D		10.0	10.0	10.0	10.0		40.0		40.0	NE
Sec. 1262	R&D for remediation of groundwater from energy activities.		25.0	26.0	27.0	28.0		106.0		106.0	NE
	Subtotal, Energy, Safety, & Environmental Protection		35.0	36.0	37.0	38.0		146.0		146.0	
	Subtotal, Title XII, Energy R&D Programs		6,167.2	6,648.2	7,228.2	7,849.2	75.0	27,842.8	301.0	28,143.8	
TITLE XIII	CLIMATE CHANGE RESEARCH AND DEVELOPMENT [a]										
Subtitle A	Department of Energy Programs										
Sec. 1301	*DOE global change research (part of Sec. 1251 total)*		*150.0*	*175.0*	*200.0*	*230.0*		*755.0*		*755.0*	NE
Subtitle B	Department of Agriculture Programs										
Sec. 1311	Carbon sequestration basic and applied research		25.0	25.0	25.0	25.0		100.0		100.0	NE
Sec. 1312	Carbon sequestration demonstration projects and outreach		10.0	10.0	10.0	10.0		40.0		40.0	NE

Senate	in millions	FY 02*	FY 03*	FY 04	FY 05	FY 06	FY 07	FY02-07	FY08-11	FY 02-11	House
Sec. 1313	Carbon storage and sequestration accounting research		20.0	20.0	20.0	20.0	20.0	100.0		100.0	NE
Subtitle C	International Energy Technology Transfer										
Sec. 1321	Clean energy technology exports program		ss					ss		ss	NE
Sec. 1322	International energy technology deployment program		100.0	100.0	100.0	100.0	100.0	500.0	400.0	900.0	NE
Subtitle D	Climate Change Science and Information										
Part I	Amendments to the Global Change Research Act of 1990										
Sec. 1336	Research Grants		17.0	17.0	17.0	17.0	17.0	85.0	68.0	153.0	NE
Part II	National Climate Services and Monitoring										
Sec. 1344	Authorization of appropriations.	50.0	65.0	75.5				190.5		190.5	NE
Sec. 1346	International Pacific research and cooperation		3.5					3.5		3.5	NE
Sec. 1348	Arctic research and policy	ss						ss		ss	
Sec. 1349	Abrupt climate change research (ss for FY09 - FY11)		10.0	10.0	10.0	10.0	10.0	50.0	10.0	60.0	NE
Part III	Ocean and Coastal Observing System										
Sec. 1352	Authorization of appropriations		235.0	315.0	390.0	445.0		1,385.0		1,385.0	NE
Subtitle E	Climate Change Technology										
Sec. 1365	Authorization of Appropriations	10.0	10.0	10.0	10.0	10.0		50.0		50.0	NE
Subtitle F	Climate Adaptation and Hazards Prevention										
Part I	Assessment and Adaptation										
Sec. 1371	Regional climate assessment and adaptation program	4.5						4.5		4.5	NE
Sec. 1372	Coastal vulnerability and adaptation assessment grants	6.0	6.0	6.0	6.0	6.0	6.0	36.0	24.0	60.0	NE
Sec. 1373	Arctic research center	35.0						35.0		35.0	NE
PART II	Forecasting and Planning Pilot Programs										
Sec. 1383	Air quality research, forecasts, and warnings		8.0	3.0	3.0	3.0		17.0		17.0	NE

Senate	in millions	FY 02*	FY 03*	FY 04	FY 05	FY 06	FY 07	FY02-07	FY08-11	FY 02-11	House
Sec. 1385	Authorization of appropriations		17.5	20.0	22.5	25.0		85.0		85.0	NE
	Subtotal, Title XIII, Climate Change R&D	105.5	527.0	611.5	613.5	671.0	153.0	2,681.5	502.0	3,183.5	
TITLE XIV	MANAGEMENT OF DOE SCIENCE AND TECHNOLOGY PROGRAMS										
Sec. 1402	Availability of funds. [a]										
Sec. 1408	Technology infrastructure program.		10.0	10.0				20.0		20.0	NE
Sec. 1414	United States - Mexico energy technology cooperation		5.0	6.0	6.0	6.0		23.0		23.0	NE
TITLE XV	PERSONNEL AND TRAINING [a]										
Sec. 1501	Workforce trends and traineeship grants.		ss	ss	ss	ss		ss		ss	NE
Sec. 1502	Postdoctoral & senior research fellowships in energy research.		ss	ss	ss	ss		ss		ss	NE
	Subtotal Division E	**105.5**	**6,709.2**	**7,275.7**	**7,847.7**	**8,526.2**	**228.0**	**30,567.3**	**803.0**	**31,370.3**	
Division F	**Technology Assessment and Studies**										
TITLE XVI	TECHNOLOGY ASSESSMENT										
Sec. 1601	National Science and Technology Assessment Service.		ss					ss		ss	NE
DIVISION G	**Energy Infrastructure Security**										
TITLE XIII	CRITICAL ENERGY INFRASTRUCTURE										
Subtitle B	Department of the Interior Programs										
Sec. 1811	Outer Continental Shelf energy infrastructure security.		450.0	450.0	450.0	450.0	450.0	2,250.0	450.0	2,700.0	NE
	Total Authorized Appropriations	**196.0**	**16,662.3**	**12,297.1**	**13,014.1**	**9,672.6**	**753.4**	**52,470.3**	**1,313.0**	**53,783.3**	

Notes:

a. Availability of Funds. Section 1402 says that appropriations authorized under certain titles shall remain available until expended. Those affected are titles XII (energy R&D), XIII (climate change R&D), and XV (traineeships and fellowships).

NE = no equivalent provision

*FY02 and FY03 columns include funds for other years when no year has been specified.

ss = such sums as may be necessary

Table 3. Authorized Appropriations in House-passed H.R. 4

House	in millions	FY 02*	FY 03	FY 04	FY 05	FY 06	FY 02-06	FY 07-11	FY 02-11	Senate
Division A	**Conservation**									
TITLE I	—ENERGY CONSERVATION									
Subtitle A	—Reauthorization of Federal Energy Conservation Programs									
Sec. 101.	DOE Energy Conservation Programs Authorization	950.0	1,000.0	1,050.0	1,100.0	1,150.0	5,250.0	0.0	5,250.0	NE
Subtitle B	—Federal Leadership in Energy Conservation									
Sec. 121.	Federal facilities and national energy security.	20.0	20.0	20.0	20.0	20.0	100.0	80.0[a]	180.0	NE
Sec. 125.	Advanced building efficiency testbed.	18.0					18.0	0.0	18.0	Sec. 913
Sec. 128.	Capitol complex.		2.0	2.0	2.0		6.0	0.0	6.0	NE
	Subtotal, Federal Leadership	38.0	22.0	22.0	22.0	20.0	124.0	0.0	124.0	
Subtitle C	—State Programs									
Sec. 131	Amendments to State energy programs.	70.0	100.0	100.0	125.0		395.0	0.0	395.0	Sec. 902
Sec. 132	Energy efficient schools (such sums through FY2010)	ss	ss	ss	ss	ss	ss	ss	ss	Sec. 903
Sec. 133	Weatherization Assistance Program	273.0	325.0	400.0	500.0		1,498.0	0.0	1,498.0	Sec. 901
Sec. 134	Low-Income Home Energy Assistance Program.	3,400.0	3,400.0	3,400.0	3,400.0		13,600.0	0.0	13,600.0	Sec. 901
Sec. 135	High performance public buildings.	ss	ss	ss	ss	ss	ss	ss	ss[b]	NE
	Subtotal, State Programs	3,743.0	3,825.0	3,900.0	4,025.0	ss	15,493.0	0.0	15,493.0	
Subtitle D	—Energy Efficiency for Consumer Products									
Sec. 141	Energy Star Program	ss	ss	ss	ss	ss	ss		ss	NE
Sec. 141A	Energy Sun renewable and alternative energy program.	10.0	10.0	10.0	10.0	10.0	50.0	0.0	50.0	NE
Sec. 143	Appliance standards - HVAC maintenance	5.0	5.0				10.0	0.0	10.0	NE
Subtitle E	—Energy Efficient Vehicles									
Sec. 152.	Railroad efficiency	25.0	30.0	35.0			90.0	0.0	90.0	Sec. 1214
	Subtotal, Efficiency (Title I)	4,771.0	4,892.0	5,017.0	5,157.0	1,180.0	21,017.0	0.0	21,017.0	

House	in millions	FY 02*	FY 03	FY 04	FY 05	FY 06	FY 02-06	FY 07-11	FY 02-11	Senate
TITLE II	—AUTOMOBILE FUEL ECONOMY									
Sec. 206	Federal fleet petroleum-based nonalternative fuels.	ss	ss	ss	ss	ss	ss		ss	NE
TITLE III	—NUCLEAR ENERGY									
Sec. 305	Cooperative research and development and special demonstration projects for the uranium mining industry.	10.0	10.0	10.0			30.0	0.0	30.0	NE
Sec. 306	Maintenance of a viable domestic uranium conversion industry	0.8					0.8[c]	0.0	0.8	NE
TITLE V	—FUELS									
Sec. 504.	Funding for MTBE contamination.	200.0					200.0[c]	0.0	200.0	Sec. 832
TITLE VIII	—MISCELLANEOUS PROVISIONS									
Sec. 801	Waste reduction and use of alternatives.	0.3					0.3	0.0	0.3	NE
	Subtotal Division A	**4,982.1**	**4,902.0**	**5,027.0**	**5,157.0**	**1,180.0**	**21,248.1**	**0.0**	**21,248.1**	
Division B	**Research & Development**									
TITLE I	—ENERGY CONSERVATION AND ENERGY EFFICIENCY									
Subtitle A	—Alternative Fuel Vehicles									
Sec. 2105.	Alternative Fuel Vehicles	200.0					200.0[c]	0.0	200.0	NE
Subtitle C	—Secondary Electric Vehicle Battery Use									
Sec. 2133.	Secondary Electric Vehicle Battery Use Program	1.0	7.0	7.0			15.0	0.0	15.0	NE
Subtitle D	—Green School Buses									
Sec. 2144.	Green School Buses	40.0	50.0	60.0	70.0	80.0	300.0	0.0	300.0	NE
Subtitle F	—Department of Energy Authorization of Appropriations									
Sec. 2161.	Energy Conservation	625.0	700.0	800.0			2,125.0	0.0	2,125.0	NE
	Subtotal, DOE Efficiency	866.0	757.0	867.0	70.0	80.0	2,640.0	0.0	2,640.0	
Subtitle G	—EPA Office of Air & Radiation Authorization of Appropriations									
Sec. 2172.	EPA Office of Air and Radiation (Climate Protection Prgs)									Sec. 1015
	Buildings	52.7	54.8	57.0			164.5	0.0	164.5	

House	in millions	FY 02*	FY 03	FY 04	FY 05	FY 06	FY 02-06	FY 07-11	FY 02-11	Senate
	Transportation	32.4	33.7	35.0			101.1	0.0	101.1	
	Industry	27.3	28.4	29.5			85.2	0.0	85.2	
	Carbon Removal	1.7	1.8	1.9			5.4	0.0	5.4	
	State and Local Climate	2.5	2.6	2.7			7.8	0.0	7.8	
	International Capacity Building	5.3	5.5	5.7			16.5	0.0	16.5	
	Subtotal, EPA Efficiency (CPP)	121.9	126.8	131.8			380.5	0.0	380.5	
	Subtotal, Efficiency (Title I)	987.9	883.8	998.8	70.0	80.0	3,020.5	0.0	3,020.5	
TITLE II	—RENEWABLE ENERGY									
Subtitle A	—Hydrogen									
Sec. 2210.	Matsunaga Hydrogen Research, Development and Demonstration program									Sec. 1223
	R&D	40.0	45.0	50.0	55.0	60.0	250.0	0.0	250.0	
	Demonstration	20.0	25.0	30.0	35.0	40.0	150.0	0.0	150.0	
Subtitle B	—Bioenergy									
Sec. 2225.	—Bioenergy									Sec. 1222
	Biopower Energy Systems	45.7	52.5	60.3	69.3	79.6	307.4	0.0	307.4	
	Biofuels Energy Systems	53.5	61.4	70.6	81.1	93.2	359.8	0.0	359.8	
	Integrated Bioenergy R&D	49.0	49.0	49.0	49.0	49.0	245.0	0.0	245.0	
	Subtotal, Bioenergy	148.2	162.9	179.9	199.4	221.8	912.2	0.0	912.2	
Subtitle D	—Department of Energy Authorization of Appropriations									
Sec. 2261.	Renewable and Electric Energy Appropriations	535.0	639.0	683.0			1,857.0	0.0	1,857.0	Sec. 1211 Sec. 1213 Sec. 1221
	Subtotal, Renewables (Title II)	743.2	871.9	942.9	289.4	321.8	3,169.2	0.0	3,169.2	
TITLE III	—NUCLEAR ENERGY									
Subtitle A	—University Nuclear Science and Engineering									
Sec. 2304.	—University Nuclear Science and Engineering									NE
	Graduate and Undergraduate Fellowships	3.0	3.1	3.2	3.2	3.2	15.7	0.0	15.7	

House	in millions	FY 02*	FY 03	FY 04	FY 05	FY 06	FY 02-06	FY 07-11	FY 02-11	Senate
	Junior Faculty Research Initiation Grant Program	5.0	7.0	8.0	9.0	10.0	39.0	0.0	39.0	
	Nuclear Engineering Education Research Program	8.0	12.0	13.0	15.0	20.0	68.0	0.0	68.0	
	Communication & Outreach Related to Nuclear Science & Engineering	0.2	0.2	0.3	0.3	0.3	1.3	0.0	1.3	
	Refueling of University Research Reactors & Instrumentation Upgrades	6.0	6.5	7.0	7.5	8.0	35.0	0.0	35.0	
	Relicensing Assistance	1.0	1.1	1.2	1.3	1.3	5.9	0.0	5.9	
	Reactor Research and Training Award Program	6.0	10.0	14.0	18.0	20.0	68.0	0.0	68.0	
	University -DOE Laboratory Interactions	1.0	1.1	1.2	1.3	1.3	5.9	0.0	5.9	
	Subtotal, Subtitle A	30.2	41.0	47.9	55.6	64.1	238.8	0.0	238.8	
Subtitle B	—Advanced Fuel Recycling Technology Research and Development Program									
Sec. 2321	**Program**	10.0	ss	ss			10.0	0.0	10.0	NE
Subtitle C	—Department of Energy Authorization of Appropriations									
Sec. 2341	Nuclear Energy Research Initiative.	60.0	ss	ss			60.0	0.0	60.0	NE
Sec. 2342	Nuclear Energy Plant Optimization program.	15.0	ss	ss			15.0	0.0	15.0	NE
Sec. 2343	Nuclear Energy technologies.	20.0	ss	ss			20.0	0.0	20.0	NE
Sec. 2344.	Nuclear Energy Operation & Maintenance	191.2	199.0	207.0			597.2	0.0	597.2	Sec. 1241
	Idaho National Engineering and Environmental Laboratory									
	Test Reactor Area Electric Utility Upgrade	0.1	1.2	1.7			3.0	0.0	3.0	
	Test Reactor Area Fire & Life Safety Improvements	0.5	0.5	0.5	0.5		2.0	0.0	2.0	
	Subtotal, Nuclear Energy (Title III)	327.0	241.7	257.1	56.1	64.1	946.0	0.0	946.0	
TITLE IV	—FOSSIL ENERGY									
Subtitle A	—Coal									
Sec. 2401	Coal and related technologies programs.	172.0	179.0	186.0			537.0	0.0	537.0	NE
Subtitle B	–Oil and Gas									
Sec. 2424	Oil Shale Research	10.0					10.0	0.0	10.0	Sec. 1231
Subtitle C	—Ultra-Deepwater and Unconventional Drilling									
Sec. 2450	Loans for FY02 - FY09	900.0					900.0[d]	0.0	900.0	NE

House	in millions	FY 02*	FY 03	FY 04	FY 05	FY 06	FY 02-06	FY 07-11	FY 02-11	Senate
Subtitle E	—Department of Energy Authorization of Appropriations									
Sec. 2481.	Oil & Gas and Fuel Cells appropriations.	282.0	293.0	305.0			880.0	0.0	880.0	NE
	Subtotal, Fossil Energy (Title IV)	1,364.0	472.0	491.0	0.0	0.0	2,327.0	0.0	2,327.0	
TITLE V	—SCIENCE									
Subtitle A	—Fusion Energy Sciences									
Sec. 2505.	Authorization of appropriations.	320.0	335.0				655.0	0.0	655.0	Sec. 1254
Subtitle B	—Spallation Neutron Source [Oak Ridge National Laboratory]									
Sec. 2522.	Construction Funding	276.3	210.6	124.6	79.8	41.1	732.4	0.0	732.4	NE
	Other Project Funding	15.4	103.3				118.7	0.0	118.7	
Subtitle E	—Department of Energy Authorization of Appropriations									
Sec. 2581.	Operation & Maintenance for the Office of Science	2,626.3					2,626.3	0.0	2,626.3	Sec. 1251
	Research regarding Precious Metal Catalysis.	5.0					5.0	0.0	5.0	
	Fermi National Accelerator Lab, Neutrinos at the Main Injector	19.4	14.8	8.9			43.1	0.0	43.1	
	Oak Ridge National Lab, Laboratory for Comparative and Functional Genomics	11.4					11.4	0.0	11.4	
	Various Locations, Project Engineering Design	4.0	8.0	2.0			14.0	0.0	14.0	
	Various Locations, Multiprogram Energy Lab Infrastructure Project Engineering Design	*3.2*					3.2	0.0	3.2	
	Various Locations, Multiprogram Energy Lab Infrastructure	18.6	13.0				31.6	0.0	31.6	
	Subtotal, Office of Science (Title V)	3,299.6	684.7	135.5	79.8	41.1	4,240.7	0.0	4,240.7	
	Subtotal Division B	**6,721.7**	**3,154.1**	**2,825.3**	**495.3**	**507.0**	**13,703.4**	**0.0**	**13,703.4**	
Division E	**Clean Coal**									
Sec. 5005.	Clean Coal Power Initiative	200.0	200.0	200.0	200.0	200.0	1,000.0	1,000.0	2,000.0	Sec. 1232
	Subtotal Division E	**200.0**	**200.0**	**200.0**	**200.0**	**200.0**	**1,000.0**	**1,000.0**	**2,000.0**	

House	in millions	FY 02*	FY 03	FY 04	FY 05	FY 06	FY 02-06	FY 07-11	FY 02-11	Senate
Division F	**Energy Security**									
TITLE VIII	—INSULAR AREAS ENERGY SECURITY									
Sec. 6801.	Insular areas energy security.	5.0	5.0	5.0	5.0	5.0	25.0	50.0	75.0	NE
	Subtotal Division F	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	**25.0**	**25.0**	**50.0**	
	Total Authorized Appropriations	**11,703.8**	**8,056.1**	**7,852.3**	**5,652.3**	**1,687.0**	**34,951.5**	**0.0**	**34,951.5**	

Notes: No authorizations in Divisions C & D.

a. 20 m each year through FY10.

b. ss for FY02-10.

c. total amount for FY02 - 06.

d. total amount for FY02 - 09.

e. total amount for FY03 - 06.

*FY2002 column includes funds for other years when no year has been specified.

ss - such sums as may be necessary (excluded from totals)

Energy Tax Provisions[3]

Fossil Fuels Supply

Oil/Gas Exploration, Development, and Production

Provision	Current Law	Senate Bill	House Bill	Comments
Marginal oil and gas wells	Independent producers can claim a higher depletion rate (up to 25%, rather than the normal 15%) for up to 15 barrels per day (bpd) of oil (or the equivalent amount of gas)	*Sec. 2301*. A $3 tax credit is provided per barrel of oil (including heavy oil) and $0.50/thousand cubic feet (mcf) of gas from marginal wells. The credit	*Sec. 3301*. Generally the same as in the Senate bill, except that the House bill provides for the carry back of any unused tax credit for up	Both bills limit the credit to 25 bpd or equivalent and to 1,095 barrels per year or equivalent.

[3] Tax provisions in this table are organized by topic, rather than by Senate section number as in the rest of this report. To find a specific numbered tax section, see the index following this table.

Provision	Current Law	Senate Bill	House Bill	Comments
	from marginal wells ("stripper" oil/gas and heavy oil). [IRC§613A(c)(6)]	phases out as oil prices rise from $15 to $18 (and as gas prices rise from $1.67 to $2.00/mcf.)	to 10 years. Under the Senate bill, unused credits cannot be carried back to years prior to the bill's enactment.	
Alaskan natural gas	No special tax incentive is provided to natural gas produced from Alaska's north slope.	*Sec. 2503.* This section of the bill creates a new tax credit for the production of natural gas from Alaska's North Slope area. The credit would be the difference between $3.25/mcf (adjusted for inflation) and the average monthly price for such gas sold in the Alberta, Canada market. In effect, the tax provision establishes a price floor of $3.25 for such gas. The credit is recaptured in the event that gas prices would rise above $4.875/mcf.	No provision.	
Enhanced oil recovery	A 15% tax credit is provided for the costs of recovering oil by one of several selected tertiary recovery techniques. The credit is part of the general business credit and is limited by the minimum tax. [IRC§43]	No provision.	*Sec. 3309*. The House bill repeals the minimum tax limitation on the enhanced oil recovery credit, thus allowing more of it to be claimed.	
Percentage depletion: **a) 100% net income limit**	The percentage depletion allowance is limited to 100% of taxable income from *each property*, but this limitation is suspended through 12- 31-2003, for marginal oil and gas. [IRC§613A(c)(6)(H)]	*Sec. 2306.* The suspension for marginal oil and gas is extended through December 31, 2006.	*Sec. 3302.* The House provision is the same as the Senate bill.	The Job Creation and Worker Assistance Act of 2002 (P.L. 107-147), enacted on March 9, 2002, retroactively extended the suspension for marginal oil and gas (which had expired on December 31, 2001) through December 31, 2003.
b) 65% taxable income limit	The percentage depletion allowance is also limited to 65% of taxable income from *all properties.* [IRC§ 613A(d)]	No provision.	*Sec. 3302*. The 65% limitation on percentage depletion for oil and gas is suspended through December 31, 2006.	Thus, the Senate bill liberalizes depletion for marginal oil and gas, while the House bill liberalizes depletion for all independent producers of oil and gas.
c) independent producer status for purposes of percentage depletion	An independent oil producer is a) one that, on any given day, does not refine more than 50,000 barrels of oil, and b) does not have retail operation grossing more than $5 million. [IRC§613A(d)]	*Sec. 2305*. The 50,000 barrel daily limit is raised to 60,000, and it applies to the average over an entire taxable year, rather than on any day during the taxable year.	*Sec. 3206.* Generally the same as in the Senate bill, except that the limit is raised to 75,000 bpd.	

Provision	Current Law	Senate Bill	House Bill	Comments
Net operating losses	For losses reported in 2001 and 2002, net operation losses may be carried back 5 years; after 2002 net operating losses can, generally, only be carried back 2 years. This applies generally to all businesses. [IRC§172]	No provision.	*Sec. 3305.* Net operating losses of oil and gas producers are allowed to be carried back for up to 5 years.	The Job Creation and Worker Assistance Act of 2002 (P.L. 107-147), enacted on 3- 9-2002, retroactively allowed net operating losses to be carried back for 5 years, through 12-31-2002.
Intangible drilling costs (IDCs)	Oil and gas producers are allowed to expense, rather than capitalize, certain IDCs. With certain limitations, this deduction is a tax preference item subject to the alternative minimum tax. [IRC§293(c), 57(a)(2)(e)]	No provision.	*Sec. 3308*. The alternative minimum tax on IDCs is repealed through 12-31- 2004. Integrated oil companies are excluded.	Independent producers were basically subject to the minimum tax on only 70% of their IDCs. The House provision implies that they no longer have to report their IDCs as a tax preference item.
Geologic & geophysical costs (G&G)	G&G costs for retained properties must be capitalized (via depletion). Dry hole costs are expensed. [IRC§263]	*Sec. 2307.* G&G costs for retained properties are amortizable (deducted evenly) over 2 years.	*Sec. 3304.* G&G costs on retained properties are fully deductible in the year incurred.	The tax treatment of G&G costs on properties that are abandoned does not change – these costs are fully deductible (expensed) in the year incurred.
Delay rentals	Under the uniform capitalization rules, delay rental payments must be capitalized (via depletion). [IRC§263,263A]	*Sec. 2308*. Delay rental payments are deducted evenly (amortizable) over 2 years.	*Sec. 3303*. Delay rental payments are fully deductible in the year paid.	
§29 credit for fuels from unconventional sources	A $3 tax credit ($1979) is available for each barrel (or equivalent) of fuels produced from unconventional sources or mined from unconventional locations. For most fuels, the credit ends in 2002 for facilities and mines placed in service by 12-31-92; for biogases, the credit ends in 2007 for facilities placed in service by 6-30-98. No credit is available for facilities placed in service after these cut-off dates (which apply to different fuels.) [IRC §29]	*Sec. 2310*. The credit is extended by 3 years for new facilities for producing most of the preexisting qualifying fuels and placed in service through 12-31-2004. For biofuels from certain wastes, the placed-in-service date is extended to 12-31-2004. For "older" facilities that produce coke and other fuels from lignite, the placed-in-service date is extended by 2 years through 12-31-2004. The Senate bill also expands the list of qualifying fuels to include refined coal that meets emissions reduction targets, heavy oil, and gas from a coal mine that will be mined for coal.	*Sec. 3306.* The House bill also extends the credit and placed-in-service dates, and broadens the types of qualifying fuels, but these differ from the Senate bill. For new projects producing most types of the preexisting qualifying fuels the credit is extended by 4 years for facilities placed -in service through 12-31-2006. For existing, "older" facilities, a lower credit is extended from 2002 to 12-31-2005 to build a facility (instead of 2004 in the Senate bill). For any production which would qualify for a credit as a result of the broadening of the provision under this bill, the quantity of fuel qualifying for a tax	Although biogases, such as landfill gas, have qualified for the credit, most of the benefits from this tax credit have accrued to coalbed methane and to other unconventional fossil gases. See CRS Report 97-679 E. Also, it is important to note the similarities and differences between this tax credit and the §45 tax credit, both of which apply, in part, to certain renewable resources. The §29 credit is granted for the production and sale of the fuel, while the §45 tax credit is granted for the production of the electricity from the fuel. Coordination between the two credits prevents "double dipping."

Provision	Current Law	Senate Bill	House Bill	Comments
			credit would be limited to 200,000 cubic ft/day of gas or equivalent.	
Tax benefits to American Indians	Present tax law provides accelerated depreciation of business property located on Indian reservations, and an employment tax credit for wages paid to American Indians. Both of these tax subsidies expire at the end of 2004. [IRC§45A, 168(j)]	*Sec. 2501, 2502.* The Senate bill extends both subsidies through December 31, 2005.	*Sec. 3310.* This House provision extends both subsidies, but only for energy-related businesses. Also, the extension is through December 31, 2006, one year longer than the Senate bill.	The Job Creation and Worker Assistance Act of 2002 (P.L. 107-147), enacted on March 9, 2002, extended the incentives through December 31, 2004.

Refining and Distribution

Provision	Current Law	Senate Bill	House Bill	Comments
Oil and gas pipelines	The recovery period for the depreciation of oil and gas pipelines is 15 years; for natural gas gathering lines, it could be either 7 or 15 years, depending upon whether they are classified as exploration or transportation equipment. [IRC§168(e)(3)]	*Secs. 2302, 2311.* This provision clarifies the recovery periods by assigning natural gas gathering lines a 7 year recovery period, and natural gas distribution lines a 15 year recovery period.	*Secs. 3201, 3202.* Natural gas gathering lines are assigned a 7 year recovery period, but natural gas distribution lines are assigned a 10 year recovery period.	
Petroleum refineries	Assets used in petroleum refining are depreciated over 10 years. [IRC§168(e)(3)]	No provision.	*Sec. 3203.* Allows recovery of petroleum refining assets over 7 years.	
Low sulfur diesel fuel	There are no special tax incentives for refining of low sulfur diesel fuel. Investments are recovered through depreciation, generally over 10 years. New, stricter EPA sulfur standards will go into effect in 2006. [IRC§168]	*Secs. 2303, 2304.* Small refiners are permitted to expense (deduct in the year incurred), rather than depreciate, the costs of complying with the new EPA sulfur regulations. A tax credit of $2.10/barrel of low sulfur diesel fuel is also provided for small refiners, limited to 25% of the capital costs.	*Secs. 3204, 3205.* The House provision is generally the same as the Senate bill except that 1) only 75% of the costs can be expensed, and 2) a small refiner cannot refine more than 150,000 barrels per day (compared to 205,000 barrels in the Senate bill).	The Senate bill reduces the fraction of expensable costs for taxpayers refining between 155,000 and 205,000 barrels per day. A similar limitation is provided with respect to the per-barrel tax credit. It would also (unlike the House bill) allow cooperatives to pass through the credits to members.
Excise tax on train diesel fuel	Diesel fuel used in train engines is taxed at 4.4¢/gal., comprising 4.3¢, which goes into the general fund, and 0.1¢, which goes into the Leaking Underground Storage Tank (LUST) trust fund.	No provision.	*Sec. 3115.* The 4.3¢ portion of the tax on train diesel would be phased-out by 1-1-2010.	

Provision	Current Law	Senate Bill	House Bill	Comments
	[IRC§4041(a)(d)]			
Excise tax on barge diesel fuel	Diesel fuel used in barges is taxed at 24.4¢/gal., comprising 1) 20.1¢ that goes into the Inland Waterways Trust Fund, 2) 4.3¢, which goes into the general fund, and 3) 0.1¢, which goes into the LUST trust fund. [IRC§4042]	No provision.	*Sec. 3115*. The 4.3¢ portion of the tax on barge diesel would be phased out by 1-1-2010.	
Gasoline used on farms	Gasoline (and diesel) used on farms is exempt from the motor fuels excise taxes (as are most other "off-highway" uses of motor fuels). The gasoline used in crop-spraying aircraft is exempt only to the extent it is used while actually spraying the crops – gasoline used from the airport to the farm is not exempt. Further, the farmer must waive the right to claim the exemption in order for the "sprayer" to claim the exemption. [IRC§6420(c)]	*Sec 2506*. The Senate bill repeals the waiver requirement and permits the aerial consumer of the fuel to claim the exemption if it is also the purchaser of the gasoline. Also, the Senate bill treats the gasoline consumed from the airport and the farm as on-farm use, thus qualifying for the exemption.	No provision.	
Commercial power takeoff vehicles	No special tax credit is available to businesses that own refuse collection trucks or cement mixing trucks. Such equipment is depreciable property. Fuel excise taxes are not generally imposed on off-highway fuel use such as in construction equipment. But there is no mechanism for crediting the excise tax paid by businesses on that portion of the fuel used by the trucks to power either the load compactor or the mixer drum.	*Sec. 2009*. Through 2004, a $250 tax credit is provided for each refuse truck with a load compactor and each cement truck with a mixer drum. After 2004, the Treasury Department will issue regulations that will reduce the excise taxes on the fuel used to power the load compactor or the drum, as the case may be.	No provision.	
Excise taxes on transportation by air	For virtually all domestic flights, the airlines assess a 7.5% *ad-valorem* tax on the ticket price of all commercial airline passenger tickets, plus a tax surcharge of $2.75 assessed on each passenger's segment of a domestic flight. Transportation by helicopter for certain specific uses is exempt. If a segment is to or from a rural airport, the domestic segment tax does not apply. Commercial airlines that transport property rather than people are assessed an ad-valorem tax, known as the cargo waybill tax, of 6.25% of the amount charged for shipping the property or freight. [IRC§4261, 4271]	*Sec. 2506*. This section of the Senate bill expands the list of exempt uses, for purposes of the passenger ticket tax and the domestic segment tax, to include transportation by fixed wing aircraft used for forestry purposes. The definition of rural airport for purposes of the domestic segment tax is also modified.	No provision.	

Provision	Current Law	Senate Bill	House Bill	Comments
Blend of diesel/water emulsion fuel	Diesel fuel used in highway vehicles is generally taxed at 24.4¢/gal., comprising the 24.3¢ Highway Trust Fund (HTF) rate, and the 0.1¢ LUST trust fund rate. [IRC§4081]	No provision.	*Sec. 3116*. The 24.3¢ HTF component of the tax on emulsified blends of diesel and water fuels is reduced to 19.7¢, reflecting the lower heat content, measured in British thermal units (Btu's), of the blended fuel.	The Taxpayer Relief Act of 1997 (P.L. 105-34) introduced the practice of taxing alternative motor fuels, such as compressed natural gas (CNG),liquefied petroleum gas (LPG), and liquefied natural gas (LNG), on the basis of the Btu equivalence to a gallon of gasoline.
Utility purchases of natural gas	State and local governments cannot use the proceeds from tax-exempt bonds to profit from arbitrage on natural gas purchases. [IRC§148]	No provision.	*Sec. 3213*. Public power utilities are exempt from the arbitrage restrictions of the tax-exempt bond rules.	

Coal Provisions

Provision	Current Law	Senate Bill	House Bill	Comments
Clean coal technologies	There are no special tax breaks for clean coal technologies, either for the investments, or the electricity produced therefrom. Pollution control equipment is amortizable over 5 years (rather than depreciated over 20 years). [IRC§169]	*Secs. 2201, 2211, 2212, 2221*. Two new tax credits are created: 1) a variable tax credit for investments in selected types of *advanced* clean coal technologies, and 2) a production tax credit for electricity generated from either *advanced* clean coal technologies, or existing coal-fired steam generators retrofitted with more energy efficient and cleaner coal technologies.	*Secs. 3117, 3118.* This provision is very similar to the Senate bill, except that the investment tax credit is fixed at 10%, whereas in the Senate bill, it is based on a complex formula based on how much of the national limits on aggregate investment in *advanced* clean coal technologies is allocated to each utility by the Treasury Secretary.	Clean coal technologies would essentially be conventional systems retrofitted with pollution control equipment that would meet strict standards; *advanced* clean coal technologies are selected types that meet energy efficiency standards, which would vary by type of coal and increase over time.

Electricity Restructuring Provisions

Provision	Current Law	Senate Bill	House Bill	Comments
Open access and tax-exempt bonds	Current federal tax provisions relating to the use of tax-exempt bonds effectively preclude public power entities with outstanding bonds from participating in open-access restructuring plans	*Sec. 2405*. This provision eases somewhat the restrictions in IRS temporary regulations with respect to issuers of tax-exempt bonds qualifying under the "output	*Sec. 3207*. This section modifies and liberalizes the private use provisions of the current tax code by grand-fathering the tax exemption of existing bonds in return for	The amendments in the House bill, which are made to the statute rather than any

Provision	Current Law	Senate Bill	House Bill	Comments
	because of the tax code's private-use restrictions. [IRC§103, 141-147]	facilities" provisions and participating in open access plans.	the loss of the tax exemption for future new generation facilities.	related regulations, are much broader than in the Senate bill.
Sale or disposition of transmission assets	Under present tax law, the sale of electricity transmission or distribution facilities is generally not considered to be an involuntary conversion, thus generally triggering a tax, which could inhibit pro-competitive sales of transmission and distribution lines and facilities to independent companies, for example to create regional transmission organizations (RTOs). [IRC§451, 1033, 1245, 1250]	*Sec. 2404*. Under this section, gain from the sale or disposition of transmission assets is recognized and included evenly over 8 years.	*Sec. 3208*. Under this section, the sale or disposition of transmission (but not distribution) assets to implement industry restructuring mandated by a state or the Federal Energy Regulatory Commission (FERC) is treated as a tax-exempt involuntary conversion, thus not triggering income tax in the case of a capital gain.	
Distribution of stock to implement ferc restructuring plans	A corporation generally is required to recognize gain on the distribution of property (including stock of a subsidiary) as if such property had been sold for its fair market value. The shareholders generally treat the receipt of property as a taxable event as well. [IRC §355]	No provision.	*Sec. 3209*. This section creates an exception to IRC §355(e) for the acquisition of stock (or assets) of any controlled corporation in a qualifying electric transmission transaction.	
Nuclear decommissioning funds	Deductions for contributions into a nuclear decommissioning fund are limited to the lesser of the amounts relating to the cost of service regulations or the IRS's ruling amount. Funds may be transferred tax-free in connection with a change in ownership of the nuclear facility to which they relate, but the transferee generally has to be a regulated utility eligible to maintain such a fund. In a deregulated and restructured industry, ambiguity regarding the tax treatment of decommissioning fund transfers may make such transactions taxable. [IRC§468A]	*Sec. 2402*. The Senate bill repeals provisions that limited the deduction to regulated utilities, thus liberalizing the deduction in the context of utility restructuring and deregulation. It clarifies that transfers of funds do not trigger a tax, and that the actual decommissioning costs are deductible when paid rather than when the actual decommissioning begins.	*Sec. 3210*. In addition to the amendments made by the Senate bill, the House provision further liberalizes the tax treatment of nuclear decommissioning costs. Unlike, the Senate bill, the House provision allows a utility to make contributions into the fund in excess of the maximum amount established by the Internal Revenue Service in certain circumstances.	
Electric cooperatives	In general, cooperatives are exempt from tax although coop patrons must pay tax on any distributed profits as "patronage dividend." Rural electric cooperatives are also exempt from tax and members do not have to report dividends, provided that no more than 15% of the coop's income is from services to nonmembers.	*Secs. 2403, 2406*. The income received by a rural electric cooperative from any open access transaction with a nonmember, and from certain other transactions, is excluded from the 15% test. Thus, participating in open access restructuring	*Sec. 3211*. The provision in the House bill is generally the same as the Senate bill, except that it limits the types of income not counted against the 15% test.	

Provision	Current Law	Senate Bill	House Bill	Comments
	[IRC§501,512]	plans would not jeopardize cooperatives' tax exemption.		

Energy Efficiency

Business Sector

Provision	Current Law	Senate Bill	House Bill	Comments
Combined heat and power systems	No special tax subsidies are provided to combined heat and power (cogeneration) systems; the recovery period for purposes of depreciation is generally 15 years.	*Sec. 2108.* Combined heat and power systems larger than 50 kilowatts (kW) would be treated as business energy property, thus qualifying for the 10% investment tax credit; the recovery period is increased to 22 years. Property using back-pressure steam turbines is also eligible.	*Sec. 3113*. Same as in the Senate bill, except that it excludes back-pressure steam turbines.	Increasing the recovery period (slowing the depreciation deductions) reduces somewhat the incentive effects of the 10% investment tax credit. The extent of this effect is unclear without further analysis.
Energy efficiency in commercial buildings	Energy efficiency property that is installed as part of a structure is depreciable over 39 years – it has the same recovery period as the structure. [IRC.§168(c)]	*Sec. 2105.* Energy efficiency expenditures made with respect to a commercial building is tax deductible (rather than depreciable), subject to a limit equal to $2.25 x sq.ft. of the building.	*Sec. 3110*. Same as in the Senate bill.	Both bills allow for designers of energy efficiency items to claim this deduction if the items are installed in the buildings of nontaxable entities.

Residential Sector

Provision	Current Law	Senate Bill	House Bill	Comments
Energy-efficiency items in existing homes	No special tax treatment is accorded to homeowners for purchases of energy efficiency enhancing property.	*Secs. 2103, 2109*. A tax credit, ranging from $75-$250/unit, is provided for selected types of new efficient heating and cooling units retrofitted to existing homes; other energy-efficiency improvements to the structure qualify for credits equal to 10% of the costs ($300 maximum).	*Sec. 3108.* A 20% tax credit up to $2,000 of cost is provided for energy efficiency improvements to existing homes.	The major differences between the two bills is that the Senate bill also applies to selected types of energy efficient heating/cooling technologies (furnaces, water heaters, AC units); the House bill applies only to "building envelope components," such as insulation.

Provision	Current Law	Senate Bill	House Bill	Comments
Energy-efficient new homes	No special tax break is available to builders who construct more energy efficient new homes.	*Sec. 2101*. A $1,250 tax credit is provided to a builder for the costs of property which makes both a new home and any energy-using equipment in the home more energy efficient, in the sense of reducing heating/cooling costs by 30% (the credit is $2,000 if such costs are reduced by 50%.)	*Sec. 3109*. This provision is very similar to the Senate bill except that the maximum credit is a flat $2,000 and the reduction in heating/cooling costs need be only by at least 30%.	
Home appliances	There is no special tax incentive for either the production or purchase of energy efficient appliances (although regulations set standards for energy use efficiency and labeling).	*Sec. 2102*. A tax credit is provided to manufacturers of more energy efficient washers and refrigerators: $50 for washers, $100 for refrigerators, subject to a cumulative per-taxpayer credit of $30 million for each type of appliance.	*Sec. 3107*. Same as in the Senate bill.	
Energy management devices	Current law provides no special tax incentives for meters, thermostats, and other energy management devices that allow utilities or consumers to monitor, control, and, thereby possibly conserve electricity or natural gas. Such property is depreciable if used in a business.	*Secs. 2106, 2107*. A $30/unit tax deduction is provided to utilities for investment in energy management devices installed in residences or businesses; the recovery period for depreciation purposes would be 3 years.	*Secs. 3111, 3112*. Same as in the Senate bill.	

Transportation Sector

Provision	Current Law	Senate Bill	House Bill	Comments
New hybrid vehicles	Under current law there is no tax credit for hybrid vehicles, but they may qualify for a deduction up to $2,000 as clean-fuel vehicles. [IRC§179A]	*Secs. 2001, 2010*. A tax credit is provided to purchasers of hybrid vehicles, ranging from $250-$9,000 for cars and light trucks, and $4,000-$13,000 for heavy trucks. The precise credit depends upon vehicle weight, power, and fuel efficiency. For heavy trucks, the credit is increased further if they meet emissions performance standards.	*Sec. 3104*. Generally, the same as the Senate bill, except that a slightly higher credit is provided for more fuel efficient hybrid cars and light trucks (an additional $1,000-$3,500 vs. $500-3,000 in the Senate bill), depending on improvements in fuel efficiency as compared with model year 2000 cars/light trucks. The House bill has an additional bonus credit of either $250 or $500 depending upon how much fuel is saved over the vehicle's useful life.	

Renewable and Alternative Fuels

Business Sector

Provision	Current Law	Senate Bill	House Bill	Comments
Electricity from renewable fuels	Electricity producers may claim a tax credit of 1.5¢/kilowatt hour (kWh), in 1992 dollars, for electricity produced from wind energy, "closed-loop" biomass, or poultry waste. [IRC§45]	*Secs. 1901-1906.* The Senate bill expands the list of qualifying renewables to include coal co-fired with closed-loop biomass, open-loop biomass (at 1.0¢ instead of 1.5¢), swine and bovine waste, geothermal, solar energy, small irrigation power facilities, municipal biosolids, and recycled sludge. The placed-in-service deadline is extended from 12-31-2003 to 12-31-2006 (12-31-2004 for open-loop biomass, which has 3 years to receive the credit instead of the normal 10 years). The Senate provision also allows 1) lessee-operators (rather than owners) to qualify for the tax credit; 2) tax-exempt entities to sell or trade any unused tax credits; and 3) rural electric coops to use the tax credits to pay back government subsidized loans. Other limitations are also liberalized or repealed.	*Sec. 3102*. The House bill has a more limited expansion of the credit than the Senate bill. It expands the list of renewables only to open-loop biomass and landfill gas. Extends placed-in-service deadline to 12-31-2006. The credit for open-loop biomass and landfill gas applies retroactively but the credit is 1.0¢ instead of 1.5¢, and is available for 5 years instead of the normal 10 years.	The Taxpayer Relief Act of 1997 (P.L. 105-34) retroactively extended the placed-in-service deadline from 12-31-2001 to 12-31-2003. The Senate bill is much broader than the House bill, although both bills exclude municipal solid waste as a qualifying renewable energy resource.
Small ethanol producer tax credit	Present law provides fuel ethanol 1) a 5.3¢ excise tax exemption (or a 53¢ blender's tax credit), and 2) 10¢/gal. tax credit for small ethanol producers (one that produces less than 15 mil. gal./year, and has less than 30 mil. gal. in production capacity). Any credit claimed must be reported as income subject to tax. Cooperatives are tax-exempt and therefore do not benefit from the producer credit, which cannot flow-through to patrons. [IRC§40, 87, 4081]	*Sec. 2005.* This provision 1) allows patrons of farmers' cooperatives to qualify for the 10¢ small producer credit; 2) defines a small producer as one with <60 mil. gal. capacity; 3) exempts the credit from the passive activity rules; 4) allows the credit against the alternative minimum tax; and 5) exempts the credit from the regular income tax under IRC§87.	No provision.	
Fuel ethanol and the highway trust fund	Present tax law toward fuel ethanol blends results in revenue losses to the Highway Trust Fund (HTF) of 7.8¢/gal., comprising for 90/10 blends 1) the 5.3¢ exemption, and the 2.5¢ of the 13.1¢ taxable portion that is allocated into the general fund. [IRC§4081, 9503 (b)(4)]	*Sec. 2006.* Beginning on 10-1-2003 the 2.5¢ component of the tax on fuel ethanol blends will be allocated into the HTF.	No provision.	

Provision	Current Law	Senate Bill	House Bill	Comments
ETBE used to produce gasohol	ETBE blended with gasoline qualifies for the same tax advantages as ethanol blended with gasoline, but the blender's credit on ethanol used to produce ETBE can only be claimed by blenders. [IRC§40,4081]	*Sec. 2007*. The Senate bill permits refiners to claim the blender's tax credit as a credit against excise taxes otherwise due on the ETBE blended fuel. The bill allows the transfer of such credit to any taxpayer with any gasoline excise tax liability.	No provision.	
Biodiesel	Biodiesel has no special tax break, and as a transportation fuel it is taxed at the same rate as petroleum diesel: 4.4¢ for trains, and 24.4¢ for barges and trucks. [IRC§4041, 4042, 4081]	*Sec. 2008*. The bill provides a tax credit – in the amount of 1¢ for each 1% of biodiesel made from virgin vegetable oil and blended petroleum diesel. The maximum credit is 20¢/gal. The tax credit for recycled vegetable oil is ½ the credit for virgin biodiesel. The excise tax otherwise due on highway biodiesel is reduced by the amount of the tax credit.	No provision.	
Business use of renewable technologies	A 10% tax credit is provided for investment in solar equipment used to 1) generate electricity (including photovoltaic systems), 2) used to heat or cool a structure, and 3) used for process heat. Geothermal energy reservoirs qualify for a 15% percentage depletion allowance. Electricity from wind technologies receives the §45 tax credit. The recovery period for renewable technologies is 5 years. Fuel cells do not qualify for tax subsidies. [IRC§45,46,48, 613(e)]	*Sec. 2104*. A tax credit is provided for business use of fuel cells (in the amount of either 30% of the costs or $1,000/kW of capacity, whichever is less) and for stationary microturbine power plants (in the amount of 10% of the costs, up to $200/kW).	*Sec. 3103*. A 10% tax credit is provided for investments in stationary fuel cells, subject to a maximum credit of $1,000/kW of capacity.	

Residential Sector

Provision	Current Law	Senate Bill	House Bill	Comments
Renewable energy technologies	There are no tax subsidies for residential applications of solar, wind, and other renewable energy technologies.	*Sec. 2103*. A tax credit is provided for residential applications of renewable technologies: 15% tax credit for solar, 30% for wind, and 20% for fuel cells. The maximum credit is $1,000 for fuel cells, and $2,000 for other technologies.	*Secs. 3101, 3103*. A 15% tax credit (up to $2,000) is provided for residential solar (10% credit to residential fuel cells, up to $1,000/kW of capacity).	Both bills include photovoltaic systems as qualifying solar property, but only the Senate bill covers wind systems in personal dwellings.

Transportation Sector

Provision	Current Law	Senate Bill	House Bill	Comments
Alternative-fuel vehicles	The incremental costs of an alternative fuel vehicle are tax deductible, up to $2,000 for a car, $50,000 for a truck. This applies to vehicles powered by LPG, LNG, CNG, hydrogen, E85 and M85. The credit phases out beginning in 2002 and ending in 2004. [IRC§179A]	*Sec. 2001*. A 40% tax credit is provided for the incremental costs of an alternative fuel vehicle. An additional 30% tax credit is available if the vehicle meets certain Clean Air Act standards. The maximum credit would be $5,000-$40,000 depending on vehicle weight.	*Sec. 3104*. Generally the same as the Senate bill, except that the credit ranges from 50%-80% (up to $3,200-$38,000) based on weight and emissions standards. The House bill also 1) provides a still higher tax credit for increases in fuel efficiency and lifetime fuel savings, and 2) covers "advanced clean-burn technology vehicles," which are not in the Senate bill.	Both bills would allow lessors (under safe harbor leasing rules) to qualify for the tax credit, thereby benefitting tax exempt entities such as state and local governments.
New fuel cell vehicles	Fuel cell vehicles may qualify for the $4,000 electric vehicle tax credit (discussed below). [IRC§30]	*Sec. 2001*. A tax credit is provided to purchasers of fuel cell vehicles, ranging from $4,000-$10,000 for cars and light trucks, (depending upon vehicle weight, and fuel efficiency) and $$20,000- 40,000 for heavy fuel cell trucks.	*Sec. 3104*. Same as in the Senate bill.	In both bills the fuel cell must be stored on board the vehicle.
Alternative-fuel refueling stations	A maximum lifetime tax deduction, up to $100,000, is provided for the costs of refueling property (excluding installation costs). This deduction expires on 1-1-2005. [IRC§179A]	*Secs. 2003, 2010*. The Senate bill replaces the current deduction with a 50% tax credit, through 2007, for the costs of clean-fuel refueling equipment (subject to a maximum tax credit of $30,000). It adds "residential clean-refueling property" to qualifying property, subject to a maximum credit of $1,000. For hydrogen refueling stations, the credit is available through 2011.	*Sec. 3105*. The House provision extends the current deduction through 2007.	The Senate bill would permit businesses that install refueling equipment on property owned by tax-exempt entities to also qualify for the tax credit.
Retail sale of alternative fuels	Fuel ethanol (and methanol) qualify for excise tax exemptions. Fuel ethanol also qualifies for blender's and production tax credits. CNG and other alternative fuels are taxed at lower rates, as measured against the Btu equivalence of gasoline. Electricity used in vehicles is not taxed. There is no tax break for the retail sale of alternative motor fuels. [IRC§40, 4041, 4081]	*Sec. 2004*. A 30¢/gal. tax credit (rising to 50¢/gal.) is provided for the retail sale of an alternative fuel (CNG, LNG, LPG, hydrogen, 85% ethanol, and 85% methanol). The credit is based on the gasoline equivalent of alternative fuel, rated at 114,000 Btu's/gal of gasoline.	No provision.	

Provision	Current Law	Senate Bill	House Bill	Comments
Electric vehicles	A 10% tax credit, up to $4,000, is available for the costs of an electric vehicle. The credit phases out from 2002-2004. [IRC§30]	*Sec. 2002.* The Senate bill repeals the existing credit, and provides a new tax credit ranging from $3,500-$40,000, depending on vehicle weight, payload capacity, and driving range. A smaller tax credit (10% of costs up to $1,500) is provided for electric vehicles with a maximum velocity of between 20-25 mph.	*Sec. 3106*. The provision in the House bill is very similar to the Senate bill except that 1) the credit ranges from $4,000 -$40,000 in the case of standard electric vehicles, and 2) the maximum credit for the slower electric vehicles is $4,000 instead of $1,500.	Under both bills, leases of electric vehicles would also qualify for the tax credit.

Miscellaneous Provisions

Provision	Current Law	Senate Bill	Senate Bill	Comments
Study of coalbed methane	Coalbed methane is one of the unconventional fuels that qualifies for the §29 tax credit. There is no provision in current law for the study of the effects of the §29 tax credit on coalbed methane.	*Sec. 2309.* The Secretary of the Treasury shall study the effects of the §29 tax credit on the production of coalbed methane.	No provision.	See An Economic Analysis of the §29 Tax Credit for Unconventional Fuels. CRS Report 97-679E.
Study of electricity restructuring tax issues	No part of current tax law directs the Treasury Department to study, and report to the Congress, the tax issues related to the restructuring of the electric utility industry.	*Sec. 2401*. The Treasury Secretary shall undertake a study of the tax issues resulting from electricity industry restructuring, particularly the effects of tax-exempt bonds on public power and on corporate reorganization.	No provision.	
Study of certain tax incentives	There is no provision in the Internal Revenue Code directing GAO to study the effects of the tax incentives for alternative motor fuels and for energy efficiency.	*Sec. 2502.* GAO is directed to undertake an analysis of the effectiveness of tax incentives for alternative motor vehicles and energy efficiency investments.	No provision.	
Dyeing requirements for diesel and kerosene fuel	Under a law that became effective on 1-1-2002 (before it was retroactively repealed), terminal facilities that sold tax-exempt diesel or kerosene had to dye the fuel. [IRC§4101]	No provision.	*Sec. 3212.* This section repeals the dyeing mandate for diesel and kerosene fuel.	The dyed fuel mandate was retroactively repealed by the Job Creation and Worker Assistance Act of 2002 (P.L. 107-147), which as enacted on March 9, 2002. Thus the House provision is redundant.
Duty free sales of gasoline and diesel	Customs duties are imposed on the importation of commodities into the U.S. The import duty on gasoline and diesel fuel is 52.5¢/barrel (1.25¢/gal.). Commodities sold in duty-free U.S. shops may be sold duty-free if	*Sec. 2504.* The Senate bill provides that any gasoline or diesel sold in duty-free shops will be considered entered for consumption, and therefore subject to duty.	No provision.	

Provision	Current Law	Senate Bill	Senate Bill	Comments
	the commodity is not entered into the U.S. (i.e., the commodity must be exported back out of the U.S.). [Harmonized Tariff Schedule of the U.S.; 19 U.S.C. 1555(b)]			
Energy credits and the alternative minimum tax	Under current law, energy-related income tax credits, and many of the non-energy tax credits, are aggregated and claimed as one general business credit, which is also subject to several limitations, including the alternative minimum tax limitation. [IRC§38]	No provision.	*Secs. 3114, 3307*. These two sections makes the minimum tax limitation inapplicable to several of the personal and business energy tax credits introduced by the bill.	
Water submetering devices	No special tax incentives are provided for meters and other water use management devices that allow utilities or consumers to monitor, control, and thereby possibly conserve water. Such property is depreciable if used in a business.	*Secs. 2110, 2111*. The cost of water submetering devices installed in consumers residences or businesses is deductible by the utility up to $30/unit; the recovery period for depreciation purposes is 3 years.	No provision.	
Tax treatment of dairy cattle	Involuntary conversions of property or assets – such as from theft, fire, or actual or threatened condemnation – are not generally subject to tax i.e., any gain or loss is not recognized, provided that the property is replaced within a specified period of time, generally two years. [IRC§1033]	*Sec. 2505.* The Senate provision treats the destruction of dairy cattle infected with bovine tuberculosis, as part of USDA's eradication program, as an involuntary conversion for tax purposes, thus ensuring that no tax is triggered, provided that the cattle are replaced within 4 years. The costs of disposing of the infected cattle would be expensed rather than depreciated.	No provision.	

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